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# BIOLOGIA

# CENTRALI-AMERICANA.

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## INSECTA.

### COLEOPTERA. Vol. III. Part 1.

### SERRICORNIA.

*BUPRESTIDÆ.*

BY

CHARLES O. WATERHOUSE, F.E.S.,

FIRST-CLASS ASSISTANT, BRITISH MUSEUM (NATURAL HISTORY).

*THROSCIDÆ and EUCNEMIDÆ.*

BY

Dr. G. HORN.

(With a Supplement by George C. Champion, F.Z.S.)

*ELATERIDÆ—DASCILLIDÆ.*

BY

GEORGE C. CHAMPION, F.Z.S.

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Plates.

# INTRODUCTION.

This Volume gives an account of seven Families of Serricorn Coleoptera. The Buprestidæ have been dealt with by Mr. C. O. Waterhouse, the Throscidæ and Eucnemidæ by Dr. G. H. Horn, and the Elateridæ, Cebrionidæ, Rhipidoceridæ, and Dascillidæ by myself. At the end of the Volume a supplementary Appendix to the Buprestidæ, Throscidæ, and Eucnemidæ is given, contributed by Mr. Waterhouse and myself.

The total number of species enumerated for the whole of the Families is 1353, of which 805 are described as new, the genera numbering 178, with twenty-eight new. Some general remarks on the Central-American Buprestidæ, Throscidæ, and Eucnemidæ are given on pp. 1, 193, and 210 respectively, and it will only be necessary to give here a summary of the remaining Families, with a short analysis of the others.

The Buprestidæ is one of the larger Families of Coleoptera, the total number of species for the whole world (Kerremans, 1891) being 4201, belonging to 185 genera. The number of species enumerated by Mr. Waterhouse in the first part of this Volume is 434, 300 of these being described as new, the number of genera being forty-eight, with four new. But, since the conclusion of his work, in December 1889, no fewer than fifty-four species from Mexico, and one genus, have been added by M. Kerremans and the late E. Dugès, and two species from the same country have been described by Mr. Waterhouse. It may be remarked, however, that most of the insects described by M. Kerremans were found in the refuse of imported Mexican tobacco in Paris, and that their origin in every case requires corroboration (tobacco from Brazil, &c. being stowed in the same building); and that Dugès paid very little attention to Mr. Waterhouse's work, hence many of his species are certain to prove synonymous with others previously described. A list of these is given in the Appendix, with some remarks by Mr. Waterhouse, who has also added descriptions of two others on pp. 664 and 666 respectively. The total number of species known from America north of Mexico is about 280 (Henshaw, 1895), belonging to thirty-two genera.

The Throscidæ (or Trixagidæ), at the present time (1897), include about 160 described species from all parts. Of this number, forty-three species, belonging to four genera, are recorded by Dr. Horn from within our limits, one genus and eighteen species being characterized as new. One species is added in the Appendix. America north of Mexico has eighteen species and three genera of this family.

The Eucnemidæ is a widely distributed Family, with a total number of about 475 species and ninety genera (1890). Dr. Horn enumerates 108 species, belonging to thirty-two genera, from Central America, six genera and fifty-six species being treated as new. Two genera and five species (three new) are added in the Appendix. Some remarks on the geographical distribution of the American genera are given on p. 210. America north of Mexico has (Henshaw, 1895) fifty-seven species and twenty-three genera of this family. Most of the species are very rare in collections.

The Elateridæ, another very extensive Family of Coleoptera, is apparently not so numerous in species (taking the whole world) as the Buprestidæ, but includes a much greater number of genera; the disproportion in the numbers of the described species of the two Families is, however, illusory, and entirely due to the fact that the brilliantly coloured Buprestidæ are much greater favourites with collectors. The total number of species from all parts is given by Dr. Candèze (1891) as 3960, belonging to 238 genera. The number of species here enumerated from Central America is 531, 290 of which are described as new, these belonging to sixty-seven genera, with nine new. America north of Mexico has about 500 species (Henshaw, 1895), with fifty genera. This Family having been exhaustively monographed by Dr. E. Candèze, it was to be expected that most of the conspicuous forms would be known; nevertheless, amongst the smaller species a great deal had to be done. The genera most numerous in species within our limits are—*Ischiodontus* (45), *Agriotes* (39), *Chalcolepidius* (33), *Monocrepidius* (32), *Æolus* (30), *Anoplischius* and *Glyphonyx* (each 23), *Horistonotus* (20), *Hemicrepidius* (19), and *Pyrophorus* and *Anchastus* (each 16). Apart from these, the most characteristic are *Tomocephalus*, *Physorhinus*, *Hypodesis*, and *Psiloniscus*. *Oistus* and *Dodecactenus*, each containing two or three conspicuous species, are peculiar to Central America. *Semiotus*, *Pyrophorus*, *Pomachilius*, and *Cardiorhinus*, each containing a large number of species in Tropical South America (80, 85, 54, and 36 species respectively), are poorly represented within our limits (the numbers being 9, 16, 2, and 1), and *Cosmesus* (with 49 South-American species) is entirely absent. *Chalcolepidius*, the giants of the family in America, on the other hand, has its headquarters, as it

were, in Central America, fully one-half of the described species being found there, many of these not extending beyond our limits. *Semiotus*, too, though poor in species, is represented by some of the largest known members of the genus, several of these (like *Chalcolepidius*) being very much in evidence in the forest clearings in the low country.

Attention has already been called to the excessive rarity of the males of the genera *Chalcolepidius* and *Semiotus*, and to the fact that the sexual characters of the last-mentioned genus have been misunderstood, the supposed males being really females. The extraordinary geographical distribution of *Meristhus scobinula*—China, Southern United States, and Central America,—doubted by Dr. Candèze, has been verified, but no explanation can be offered to account for it. The wide distribution in America of *Hemirhipus fascicularis* and *Orthostethus infuscatus*—both large and conspicuous insects—is also worthy of comment.

To summarize, there is little to distinguish the Elateridæ of Central America from those of Tropical South America, most of the genera being common to both regions, and the endemic genera exceedingly few in number; but they differ greatly from those of America north of Mexico, as shown by the larger North-American genera, *Corymbites* having eighty, *Elater* forty-nine, *Melanotus* forty-four, and *Limonius* thirty-one species respectively—the numbers for Central America being one, one, five, and two,—and the absence in Central America of such genera as *Melanactes*, *Sericosomus*, *Pityobius*, &c. North America, moreover, has only one *Pyrophorus* and three *Ischiodontus*, and no *Semiotus*. My labours on this Family have been greatly facilitated by free access to the very extensive collection of Elateridæ formed by the late E. W. Janson; and also by the assistance of Dr. Candèze, the well-known veteran specialist in this group, who has been kind enough to lend the types of the whole of the described Central-American Elateridæ now in his possession.

The Cebrionidæ is a Family containing but few species, mostly belonging to two genera, *Cebrio* and *Scaptolenus*, chiefly remarkable from the great rarity of the females, which are either apterous or have abbreviated wings, the males, too, of many of them being rarely found. One genus only, *Scaptolenus*, is represented in Central America; twenty-nine species, with nine new, are enumerated. It has not yet been recorded from South America.

The Rhipidoceridæ is another Family of limited extent, and in which also the females are rarely met with. Fourteen species, belonging to three genera, are recorded from Central America, one genus and eleven species being treated as new. *Callirrhipis*

is noteworthy from the strong flabellation of the antennæ in the males and the almost glabrous body in the females, the antennæ in this sex being serrate. One of its species, *C. laportei*, is extremely variable in colour.

The Dascillidæ is a family of considerable extent, and one, as regards its exotic species, almost entirely neglected by Coleopterists, no one having hitherto attempted to deal systematically with the very numerous tropical members of the group. The North-American forms, however, have been monographed by Dr. Horn, and his work has been of great assistance to me in dealing with the Central-American species. The extreme fragility of these insects is well known, and it is perhaps for this reason that they have been so little studied. It is a significant fact that up to the time of writing not a single species of *Ptilodactyla* had been recorded from within our limits, whence no fewer than fifty-nine are here described, the genus, in fact, being one of the most characteristic in the Central-American fauna.

The total number of Dascillidæ from all parts is given in the 'Munich Catalogue' (1869) as 228, with thirty-one genera, and about one hundred species have since been added. America north of Mexico has (Henshaw, 1895) fifty-two species, with twenty-three genera. From Central America no fewer than 130 species are here recorded, these belonging to twenty genera, seven genera and 116 species being treated as new. The majority of the Central-American species belong to two genera only, *Ptilodactyla* (59) and *Scirtes* (21), this last-mentioned genus apparently greatly outnumbering *Cyphon* in the tropics, nine species only of the latter being at present known from within our limits. The Tropical-American genus *Artematopus* represents a very distinct section of the family; eight species are described from the southern portions of our region. The other Central-American genera—like those of North America—each contain but few species.

G. C. C.

August 1897.

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| Chætodactyla lyciformis, ♀ ..... | XXVII. | 27 | 661 |

# ERRATA ET CORRIGENDA.

| Page | Line | |
|---|---|---|
| 19 | 30–33 | *for* TRINCOPYGE *read* THRINCOPYGE. |
| 59 | 15 | *for* 46–89 *read* 46–90, and in all cases below this read one number higher to 141. |
| 186 | 14–26 | *for* TRYPANIDIUS *read* TRYPANTIUS. |
| 186 | 24 | *after* the specific name *insert* (*Trypantius infrequens*, Tab. IV. fig. 3). |
| 255 | 3 | for *mexicanus* read *americanus*. |
| 273 | 30 | *dele the words* (except in *C. webbi*). |
| 389 | 23 | *for* ♀ *read* ♂. |
| 417 | 13 | *transfer the reference* (Fig. 3) *to the var.* α *on line* 9. |
| 477 | 29 | for *A.* read *H.* |
| 516 | 16 | *for* Fig. 23 *read* Fig. 22. |
| 597 | 1 | *for* 5 *read* 4. |
| 597 | 31 | *for* 6 *read* 5. |
| 607 | 2, 3 | for *hemisphærica* read *hemisphæricus*. |

# BIOLOGIA CENTRALI-AMERICANA.

## ZOOLOGIA.

## Class INSECTA.

## Order COLEOPTERA.

### Tribe SERRICORNIA.

### Fam. BUPRESTIDÆ.

This family is very well represented in Central America; and the largest, and at the same time nearly the smallest, species of the family occur there. The presence of the largest Buprestid here is worthy of note, because the larger species of the family are remarkably absent, and between *Euchroma* (which measures $2\frac{1}{2}$ or $2\frac{3}{4}$ inches in length) and the next in size, *Chalcophora* (which is only $1\frac{1}{6}$ inch long), there is a great gap. In the Old World the large *Catoxantha bicolor* is accompanied by smaller species of the same genus, and there is a gradual diminution in size through the following genus *Chrysochroa*.

The species are chiefly referable to the genera *Psiloptera*, *Acmæodera*, *Actenodes*, *Chrysobothris*, *Agrilus*, and *Brachys*. The genus *Conognatha*, so numerous in Brazil and on the Amazons, is only represented at the time we are writing by a few specimens of two or three species.

#### CHALCOPHORA.

*Chalcophora*, Solier, Ann. Soc. Ent. Fr. 1833, p. 278; Laporte & Gory, Mon. Bupr. p. 7.

The species of this genus are recorded from China, Japan, Europe, North America, and Guadeloupe; the following species therefore show an extension in the range of distribution.

1. **Chalcophora mexicana.** (Tab. I. fig. 1.)

*C. virginiensi* affinis; thoracis lateribus ante medium angulatis, postice sinuatis, carina mediana latiore minus elevata; elytris impressionibus rugulosis cupreis notatis, intervallis fortiter punctatis.

Long. 13 lin.

*Hab.* MEXICO, Oaxaca (*coll. Brit. Mus.*).

This species is very close to *C. virginiensis*; but all the impressions on the thorax and

elytra are more coppery. The thorax is strongly angular at the sides rather before the middle, and the posterior angles are acute and somewhat divergent; the median smooth space is broad and scarcely convex, and the impression on each side of it has some irregularly placed strong punctures; the sides are strongly rugose. The elytra have the impressions similarly placed to those in *C. virginiensis*; but the raised portions are less prominent, and, having large punctures scattered over them, they are less glabrous; all the humeral region is more rugulose.

### 2. **Chalcophora virginiensis.**

*Buprestis virginiensis*, Drury, Ill. Nat. Hist. i. p. 66, t. 30. f. 3[1], and index.
*Chalcophora noveboracensis*, Fitch, Trans. N. York Soc. Agr. 1859, p. 701.

*Hab.* North America, Virginia[1] (*Crotch*).—Mexico (*coll. Brit. Mus.*); Guatemala, Guacamaya, 1800 feet, San Gerónimo (*Champion*).

There are in the British-Museum collection four examples marked Mexico. One of them is undoubtedly *C. virginiensis*; a second has the thorax more coarsely punctured at the sides; the other two may ultimately prove to belong to a distinct species, as they have the smooth parts on the thorax wider, and the sides are slightly sinuous before the posterior angles. I deem it best, however, to consider these as varieties at present.

The numerous specimens taken by Mr. Champion are more of a grey-bronze than is usual in the North-American examples; and the specimens from San Gerónimo have the thorax more rugose at the sides; these characters, however, do not appear to be constant, and I do not, therefore, consider them specific.

## CHRYSESTHES.

*Chrysesthes*, Solier, Ann. Soc. Ent. Fr. 1833, p. 290.

Species of this genus have at present been found in Brazil, Cuba, and Honduras.

### 1. **Chrysesthes auronotata.** (Tab. I. fig. 3.)

*Chrysesthes auronotata*, Saunders, Cist. Ent. i. 1874, p. 225.

*Hab.* British Honduras (*coll. Brit. Mus.*[1] and *Blancaneaux*), Belize (*Sallé*).

This species is recognizable from its having only three strong costæ on each elytron (besides the lateral one), with two or three golden-coppery spots.

### 2. **Chrysesthes tripunctata.** (Tab. I. fig. 2.)

*Buprestis tripunctata*, Fabr. Mant. Ins. i. p. 179.

*Hab.* British Honduras, Rio Hondo (*Blancaneaux*).

A specimen of this species in the British Museum, compared by Mr. Edward Saunders with the original type, has the sides of the abdomen densely and finely punctured, except along the apical margin. The specimen taken in the above-mentioned locality

agrees with the former in the punctuation of the abdomen; the elytra, however, are without the golden spots. I think, nevertheless, they undoubtedly belong to the same species.

## PELECOPSELAPHUS.

*Pelecopselaphus*, Solier, Ann. Soc. Ent. Fr. 1833, p. 286.

The species of this genus are chiefly from Central America and the Amazons. There is, however, a single specimen of *P. angularis*, Schönh., in the British Museum from Monte Video. The species are easily distinguished from *Chrysesthes* by their narrow tarsi.

### 1. **Pelecopselaphus chevrolatii.** (Tab. I. fig. 5, 5 *a*.)

*Pelecopselaphus chevrolatii*, E. Saunders, Cist. Ent. i. 1874, p. 226[1].

*Hab.* British Honduras (*Blancaneaux*); Nicaragua, Chontales[1] (*Belt*).

### 2. **Pelecopselaphus frontalis.** (Tab. I. fig. 5, *b*).

Nitidus, subtus cupreo-æneus; fronte cupreo-aurea, creberrime fortiter punctata; thorace nigro-æneo, fortiter punctato, lateribus cupreo tinctis; elytris cyaneo-æneis, plaga obliqua sub humero, macula laterali ante apicem apiceque obscure purpureis; pedibus nigro-cyaneis.

Long. 6 lin.

*Hab.* Nicaragua, Chontales (*Belt*).

This species is close to *P. chevrolatii*, but is narrower; the forehead is more closely punctured; the thorax is more conical in outline, not dilated at the posterior angles, without any lateral impression, and with less distinct purple margins. When viewed from the side the lateral line is more oblique anteriorly, not turned down suddenly as in *P. chevrolatii*. The elytra are similarly marked, but the coloration and the spots are altogether less bright; the punctuation is the same.

### 3. **Pelecopselaphus curtus.**

*Pelecopselaphus curtus*, Thomson, Typi Bupr. 1878, p. 25.

*Hab.* Mexico (*Sallé*).

Three examples named *P. curtus*, Th., from M. Sallé's collection only differ from *P. frontalis* in having the posterior angles of the thorax slightly enlarged, and in having the legs rather æneous. Whether these are referable to the species named *P. curtus* by Thomson I am unable to say; for, although he observes that it is a species "bien distincte de toutes les autres par les caractères ci-dessus," I see nothing in those characters to enable me to say whether his description refers to my *P. frontalis* or the specimens named *P. curtus* from M. Sallé's collection, or any other of the shorter species.

### 4. **Pelecopselaphus acutus.** (Tab. I. fig. 5 *c*.)

*Pelecopselaphus acutus*, E. Saunders, Cist. Ent. i. 1874, p. 226[1].

*Hab.* Guatemala, El Reposo (*Champion*); Nicaragua[1] (*Sallé*); Panama[1] (*Brit. Mus.*).

This species resembles *P. frontalis* in general form, but is larger, has the thorax more strongly punctured in front and at the sides. The elytra have not the purple spots, the punctures are closer and smaller, and the scutellar region is smooth.

### 5. **Pelecopselaphus lateralis.** (Tab. I. fig. 4.)

Supra olivaceus, subtus læte cupreus; capite cupreo, fortiter punctato, thorace lato, ante medium parum angustato, sat crebre fortiter punctato, linea mediana impressa margineque laterali cupreis; elytris thorace haud latioribus, singulis costis tribus bene elevatis, interstitiis crebre punctulatis, regione scutellari læviore.

Long. 11 lin.

*Hab.* Mexico, Tuxtla, Playa Vicente (*Sallé*); Nicaragua, Chontales (*Belt*).

*P. lateralis* is nearest to *P. angularis*; but it is shorter, the thorax is less narrowed in front, and the lateral line (viewed from the side) instead of being greatly oblique, suddenly bends down in the middle (Tab. I. fig. 4, *a*).

## AGÆOCERA.

This genus is inserted in Mr. E. Saunders's 'Catalogue of Buprestidæ,' p. 50; but it appears never to have been characterized. The species for which it is proposed is *Anthaxia gigas*, Lap. & Gory. This species stands under *Pelecopselaphus* in Gemminger and Harold's catalogue, and in its generic characters (in the structure of the sterna and intercoxal process of the abdomen) it undoubtedly approaches very nearly to that genus. I think, however, that it may be better to adopt the genus *Agæocera* as distinct from *Pelecopselaphus*, on account of the trisulcate thorax, the suture of the elytra not depressed at the base, and joined by a short costa near the scutellum, the apical margins of the elytra not acutely dentate, but with a few crenulations or quite simple.

### 1. **Agæocera gigas.** (Tab. I. fig. 16.)

*Anthaxia gigas*, Lap. & Gory, Mon. ii. (Anthax.) p. 2, t. 1. f. 1[1].

*Hab.* Mexico, Orizaba (*Sallé*), Plan del Rio (*Höge*).

Originally described as from the East Indies[1], this species has since been found to inhabit Mexico. A specimen in the British Museum compared by Mr. Saunders with the original type bears this latter locality. It varies in size from $6\frac{3}{4}$ to $8\frac{3}{4}$ lines. The colour varies from green (with the suture of the elytra narrowly coppery) to deep copper-colour.

### 2. **Agæocera scintillans.**

Viridis; elytris confertim ruguloso-punctatis, singulis costis tribus nitidis, prima tertiaque abbreviatis.

Long. $7\frac{1}{2}$ lin.

*Hab.* Mexico, Songora (*coll. Brit. Mus.*).

This species resembles *A. gigas* in general form and appearance; but the suture of

the elytra is not coppery. The thorax has the discoidal portion shining and very slightly tinted with coppery, rather more distinctly coriaceous than in *A. gigas*, with the strong punctures more numerous; the sides are very closely and rugosely punctured; the middle channel is not very deep, and is less closely, but more strongly punctured than in *A. gigas*, the lateral channels are very rugose. Each elytron has a short obtuse costa near the scutellum, united to the raised suture not far from the base; there is then a costa which extends only for two thirds the length of the elytron the next costa extends nearly to the apex, becoming much attenuated posteriorly; the next is very short and slightly interrupted; the submarginal costa extends to the apex; all the interspaces are very closely, rather finely, and rugulosely punctured; the elytra are not quite contiguous at the apex; the lateral margins at the apex are scarcely crenulate.

## EUCHROMA.

*Euchroma*, Solier, Ann. Soc. Ent. Fr. ii. 1833, p. 284.

This genus contains the largest known species of this family. The species are found in Mexico, and as far south as Brazil.

### 1. **Euchroma goliath.**

*Buprestis goliath*, Lap. & Gory, Mon. ii. Bupr. p. 7, t. i. f. 2[1].
*Euchroma columbica*, Mann. Bull. Mosc. 1837, pt. 8, p. 31[2].

*Hab.* Mexico[1], Almolonga (*Höge*), South-west Yucatan; British Honduras, Belize (*Blancaneaux*); Guatemala (*Scherzer*), Izabal (*Sallé*), San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson, Belt*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—Colombia, Antiochia[2].

A common species in Mexico and Central America, distinguished from *E. gigantea*, L., by the crenulation of the margin of the elytra near the apex.

## HALECIA.

*Halecia*, Lap. & Gory, Mon. i. Bupr. p. 108.

This genus, as at present constituted, is found throughout America, from Pennsylvania to Patagonia; but the species are most numerous in Brazil; several are recorded from the West Indies.

### 1. **Halecia chrysodemoides.**

*Halecia chrysodemoides*, Saunders, Cist. Ent. i. p. 228[1].

*Hab.* Nicaragua, Chontales[1] (*Belt*).

This is one of the section of species of *Halecia* which have the thorax not angular at the sides near the base. It is nearly always golden-green; but one example before me is tinted above with a coppery hue. The type specimen has the costæ on the elytra blue-green; but other examples have them of a purple-coppery colour.

### 2. **Halecia cupreosignata.** (Tab. I. fig. 7.)

Olivaceo-ænea ; elytris fortiter punctato-striatis, singulis maculis quinque cupreis notatis.
Long. 11 lin.

*Hab.* Nicaragua, Chontales (*Belt, Janson*).

A species having somewhat the form of *H. rugipennis*, Gory, but with the thorax less angular at the sides, and the elytra truncate at the apex. Head closely and rather strongly punctured. Thorax gently narrowed from rather behind the middle to the front, nearly straight (or *very* slightly sinuate) at the sides behind the middle ; impressed on the disk and with an obtuse longitudinal, median, coppery channel ; sparingly and finely punctured on the disk, thickly and strongly punctured towards and at the sides, with some few transverse punctures intermixed ; there is an indistinct impression on each side in front ; and at the base (at a little distance from the posterior angle) there is a distinct round fovea ; the posterior angles are slightly prominent and acute. Elytra a little broader than the thorax, strongly striated rather behind the middle, the striæ continued to the base by lines of strong punctures ; the striæ are themselves punctured ; the intervals are convex between the strong striæ, and nearly smooth, towards the sides they are finely rugulose and more irregular and finely punctured. Each elytron has the following coppery frosted impressions—a round one above the shoulder, another small one a little removed from the base on the third interstice, a large one about the middle (united to a small one below the shoulder), a large transversely ovate one behind the middle, and a smaller round one near the apex ; the fourth interstice is continued to the apex as a distinct costa ; the apex of each elytron is slightly emarginate ; the apical margins are strongly serrate.

I have only seen two examples of this species, which probably represent both sexes. The specimen found by the late Mr. E. Janson is rather narrower than the one from which I have taken the above description ; it also has the thorax gradually narrowed from the base to the apex, and the posterior angles are not at all prominent. The spot under the shoulder of the elytron is also quite separate from the one on the disk.

### 3. **Halecia beltii.** (Tab. I. fig. 6.)

*Halecia beltii*, Saunders, Cist. Ent. i. p. 232 [1].

*Hab.* Nicaragua, Chontales [1] (*Belt*).

### 4. **Halecia guttata.** (Tab. I. fig. 9.)

Ænea, nitida ; elytris fortiter punctato-striatis, guttis quatuordecim purpureo-chalybeis notatis.
Long. 7 lin.

*Hab.* Nicaragua, Chontales (*Belt*).

Very close to *H. beltii*, and might be taken for a variety of that species. It is, however, of a uniform æneous colour instead of being golden. Head very thickly

punctured. Thorax slightly narrowed in front, sparingly punctured on the disk, more thickly and more strongly so at the sides (but not quite so closely as in *H. beltii*); there is a shallow longitudinal impression in the middle of the front margin, and a small fovea at the base; above the anterior angle is an olive-green spot; just above this there is a very shallow impression; and above the posterior angle is a similar impression, which is almost united with the anterior one; these impressions are slightly tinted with coppery. Elytra similar to those of *H. beltii*, but rather broader, and with the striæ much more deeply impressed and more strongly punctured, the interstices are more convex and the dorsal ones more smooth; the spots (seven on each elytron) are placed as in *H. beltii*, but are of a deep purple-blue; the fourth interstice unites with the eighth at some distance from the apex, and is continued as a distinctly raised, deep-blue costa nearly to the apex. The upperside of the femora and the tibiæ are dark blue; the tarsi are blue-green.

## TRACHYCELE.

*Trachykele*, Marseul, Abeille, ii. 1865, p. 149.

### 1. **Trachycele blondeli.** (Tab. I. fig. 8.)

*Trachykele blondeli*, Marseul, Abeille, ii. 1865, p. 150.

*Hab.* Mexico.

This very interesting insect is said to come from Mexico; but there is some doubt as to the correctness of this locality. There is a single example in the British Museum, which is here figured, but without locality.

## GYASCUTUS.

*Gyascutus*, LeConte, Trans. Ac. Phil. 1860, xi. p. 189.

The species of this genus occur in the southern parts of North America. I have not seen any specimens from Central America: one species, however, is recorded as having been taken during the Mexican-Border Expedition in Sonora; and I therefore include it here.

### 1. **Gyascutus cælatus.**

*Chalcophora cælata*, LeConte, Proc. Ac. Phil. 1858, x. p. 67[1].
*Gyascutus cælatus*, LeConte, Trans. Ac. Phil. 1860, xi. p. 190.

*Hab.* Mexico, Ures, Sonora (*Dr. Webb* [1]).

## HIPPOMELAS.

*Hippomelas*, Lap. & Gory, Mon. ii. p. 92.

I think it is to be regretted that this genus has been confounded with *Psiloptera* in Lacordaire's 'Genera des Coléoptères,' and also in Gemminger and Harold's Catalogue;

it appears to me to be perfectly distinct. The form of the apical joint of the antennæ mentioned by Gory is a slight character; the serration of the margins of the apex of the elytra is more important; but there is another character, not, I believe, hitherto noticed—namely, that in all the species of *Psiloptera* the labrum is metallic, whilst in *Hippomelas* it is brown and leathery.

There is at present only one species in the genus, which appears to be confined to Mexico.

### 1. **Hippomelas saginatus.** (Tab. I. fig. 10.)

*Buprestis saginata,* Mannerheim, Bull. Mosc. 1837, viii. p. 65.
*Buprestis* (*Hippomelas*) *mexicana,* Cast. & Gory, Mon. ii. 1841, p. 92, pl. xxiv. f. 126.

*Hab.* Mexico, Oaxaca, Izucar, Puebla (*Sallé*).

This species varies greatly in size; the smallest example before me measuring only 8 lines, the largest 14 lines. The colour varies, being sometimes very dark blue, and sometimes brassy green, or tinted with a coppery hue.

## PSILOPTERA.

*Psiloptera,* Solier, Ann. Soc. Ent. Fr. (1833), p. 283.

The type of this genus is *Buprestis attenuata,* Fabr. (Ent. Syst. p. 187). The species are found in the West Indies, in Texas, throughout Central and South America, in all parts of Africa, in Turkey, Persia, India, Siam, and Timor.

### 1. **Psiloptera polymita.**

*Lampetis polymita,* Chev., Silb. Rev. Ent. v. 1837, p. 59.
*Buprestis* (*Latipalpis*) *cortesi,* Lap. & Gory, Mon. ii. 1841, p. 81, t. 21. f. 108.

*Hab.* Mexico, El Cameron (*Sallé*).

### 2. **Psiloptera granulifera.**

*Buprestis granulifera,* Lap. & Gory, Mon. ii. Bupr. p. 83, t. 21. f. 112.

*Hab.* Mexico.

I only know this species from figure and description, unless it be the same as *P. monilis,* Chevr., which is very probable.

### 3. **Psiloptera monilis.** (Tab. I. fig. 11.)

*Lampetis monilis,* Chevr. Col. Mex. fasc. i. sp. 1.

*Hab.* Mexico, El Cameron (*Sallé*); Guatemala, Escuintla and El Reposo (*Champion*); Costa Rica (*van Patten*).

### 4. **Psiloptera chalconota.**

Statura *P. monilis*, Chev.; viridis, crebre punctata, thoracis disco elytrorumque dorso plus minusve rufo-cupreis, corpore subtus brunneo-cupreo, tibiis tarsisque cyaneis.
Long. 9–12 lin.

*Hab.* MEXICO, Puebla, Cuernavaca (*Sallé*).

A species having the general form of *P. monilis*, Chev. The head, thorax, and elytra are bright golden green (rather darker than in *P. monilis*); the disk of the thorax is suffused with reddish coppery; and the dorsal part of the elytra, as far as the fourth stria, is also coppery; the extreme apex of the elytra is tinted with blue. The head is closely, coarsely, and irregularly punctured. The thorax is about one quarter broader than long, obliquely narrowed in front of the middle, somewhat flattened above near the base; the punctures on the disk are strong and clear, generally in twos and threes together, leaving the greater part of the surface smooth; at the sides the punctures are much deeper, and very close and confused; there is a strongly impressed line along the front margin on each side. The elytra at the base are scarcely broader than the thorax, very gradually narrowed to near the apex, where the attenuation is more rapid. There are some lines of moderately strong punctures; but they are so constantly interrupted as to be almost lost. There are very numerous golden punctured spots on the dorsal region; the surface at the sides is very uneven, the raised parts having a tendency to form transverse rugæ. The apex of each elytron is slightly obliquely truncated, the outer angle very slightly dentiform. The whole underside of the insect is brownish coppery, with more brassy reflections, very thickly and strongly punctured, the flanks of the prosternum being equally strongly punctured as the other parts. The prosternal process is smooth and shining, deeply channelled on each side. The intercoxal process of the abdomen has a smooth ridge on each side; these ridges are very slightly divergent posteriorly.

### 5. **Psiloptera monilis,** var.

*Hab.* NICARAGUA, Chontales (*Belt*).

A single example from Chontales, differing from the ordinary type of *P. monilis* in being rather broader, in being of blue-green colour, and in having the thorax rather angulated at the sides. This may prove hereafter to be a distinct species.

### 6. **Psiloptera simplex.**

Statura *P. monilis*, æneo-fusca; thorace fortiter punctato; elytris fortiter punctato-striatis, interstitiis dorsalibus convexis lævibus, lateralibus grosse punctatis et confusis.
Long. $12\frac{1}{2}$ lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

*P. simplex* agrees in almost every respect with *P. monilis*, except in being of a brown-bronze colour, and in having the dorsal costæ of the elytra not interrupted by

punctured spots. On these dorsal costæ may be seen here and there a single puncture; the lateral costæ and striæ, both being very deeply and irregularly punctured, are much confused and interrupted; but there are no finely punctured spots as in *P. monilis*. The punctuation above and below is like that of *P. monilis*: i. e. the head is very strongly punctured; the thorax has strong punctures, which on the disk are placed irregularly, the spaces between them being sometimes very little and at others as much as three or four times the diameter of a puncture. The prosternal process is deeply channelled on each side, with the middle convex and smooth. The femora, sterna, and abdomen are all closely and very strongly punctured.

### 7. **Psiloptera principalis.**

*Buprestis principalis*, Lap. & Gory, Mon. ii. p. 38, t. 9. f. 45.
*Psiloptera presidens*, Thomson, Rev. et Mag. d. Zool. viii. 1856, p. 115, t. 6. f. 1[1].

*Hab.* Panama (*Boucard*).—Colombia, Cartagena [1].

This beautiful species is one of the few which have the narrow portion of the posterior coxæ densely and finely punctured and pilose, whilst the inner or broader part is coarsely punctured and shining. I have not seen this important character noticed.

### 8. **Psiloptera hirtomaculata.**

*Buprestis hirtomaculata*, Herbst, Käf. ix. p. 84, t. cxlii. f. 6; Lap. & Gory, Mon. ii. p. 38, t. 9. f. 46[1].

*Hab.* Panama (*Boucard*).—Colombia, Cartagena [1]; Venezuela.

### 9. **Psiloptera cortesi.**

*Buprestis cortesi*, Lap. & Gory, Mon. ii. Bupr. p. 81, t. xxi. f. 108.
*Lampetis polymita*, Chev., Silb. Rev. Ent. v. p. 59.

*Hab.* Mexico, El Cameron, Oaxaca (*Sallé*); Nicaragua, Chontales (*Belt*).

The specimen from Nicaragua may prove to be a distinct species; the thorax is less angular at the sides, the punctures are more regularly disposed, and the spots on the interstices of the elytra are smaller and more punctiform.

### 10. **Psiloptera drummondi.**

*Buprestis drummondi*, Lap. & Gory, Mon. ii. Bupr. p. 37, t. 9. f. 44.

*Hab.* Mexico.

### 11. **Psiloptera webbii.**

*Psiloptera webbii*, LeConte, Proc. Ac. Phil. 1858, p. 66.

*Hab.* Mexico, Ures, Sonora (*Webb*).

### 12. **Psiloptera cupreo-ænea.**

*Buprestis cupreo-ænea,* Latr. Voy. Humb. Ins. ii. p. 60, pl. 34. f. 5; Lap. & Gory, Mon. iv. Suppl. p. 91, t. 16. f. 88.

*Hab.* Central America.

I am not acquainted with this species.

### 13. **Psiloptera dilaticollis.** (Tab. I. fig. 15.)

Violaceo-nigra, subtus violacea, depressa; thorace lato, postice sinuatim angustato, opaco, disco lævi, lateribus crebre fortiter punctatis, basi fossa rotundata impressa; elytris punctato-striatis, striis parum impressis, maculis plurimis auratis punctatis et pilosis notatis.

Long. 11–15 lin.

*Hab.* Mexico, Hacienda de Bleados, San Luis Potosi, Sierra de San Miguelito (*Dr. Palmer*).

The head is very strongly and rugosely punctured. The disk of the thorax has sometimes two or three strong punctures; there is a slight median impression, which terminates posteriorly in a deep fossa. The striæ of the elytra are strongly punctured, scarcely impressed on the back, but more so at the sides; the apex of each elytron is slightly obliquely sinuate, the sutural angle somewhat dentiform. The brassy spots are placed very irregularly, but have a tendency to unite transversely. All the underside is closely and strongly punctured, of a deep violet-blue, with a little brassy colour on the sterna and base of the abdomen. The prosternal process has only two or three punctures. The posterior coxæ have their posterior exterior margin finely punctured.

This species should be placed near *P. tucumana.*

## DICERCA.

*Dicerca,* Eschscholtz, Zool. Atl. i. p. 9 (1829).

The species of this genus are principally found in North America, Europe, and Siberia; but some are recorded from Senegal, Brazil, Peru, and Chili.

### 1. **Dicerca inconspicua.**

*D. æneæ* affinis et similis, griseo-nigra, ænescens; thorace linea mediana angusta lævi, elytrorum marginibus maculis duabus impressis subtiliter punctulatis.

Long. 10 lin.

*Hab.* Mexico (*Höge, Flohr*).

So near is *D. inconspicua* to *D. ænea* (Linn.) that at first sight it might be taken for a variety of that insect. The form is nearly the same, with the thorax less angular at the sides than is usual in that species, and with the apex of each elytron a little more oblique and the external angle less produced. The sculpture is similar; but that on the thorax is perhaps a little less coarse, and there is a fine, smooth, raised median line. The punctuation of the interstices of the elytra is less strong and less rugose; and the

punctures are more clearly defined; the striæ are also more distinct. On th side, below the shoulder, there are two small brassy green finely punctured impressions close together; and about the middle, a little more removed from the margin, there is another similar spot. The sculpture on the underside is altogether less strong; the prosternal process and metasternum are similarly impressed, but nearly smooth, with comparatively few punctures.

Some specimens have a more coppery tint than the others; and the sculpture varies slightly.

The male has the apical segment of the abdomen slightly but distinctly emarginate, with the angles dentiform; the female has this segment more narrowed and rounded at the apex.

### 2. **Dicerca æneovaria.** (Tab. I. fig. 14.)

*D. æneæ* affinis et similis, nigra; thorace cupreo-punctato, elytris plagis transversis guttisque æreis variegatis, apice truncato, quadrispinoso.

Long. $9\frac{1}{2}$–$11\frac{1}{2}$ lin.

*Hab.* Mexico, near the city (*Höge*).

Allied to *D. æneæ*, but less convex, of blacker ground-colour, much less closely sculptured, &c. It is still closer to *D. inconspicua*; the thorax is the same, and has a very narrow median smooth line. The chief difference is in the sculpture of the elytra. The striæ are rather more impressed (especially near the suture); the raised parts are black; the impressions (and punctures) are brassy bronze, and occupy more of the surface than the black smooth parts: three impressions on each elytron (although somewhat confused) are particularly noticeable; the first is below the shoulder, the second rather behind the middle, the third is some distance from the apex; all three commence on the margin, and extend to about the third stria from the suture: besides these there are numerous other irregular bronzy spots, the apical region being almost entirely taken up with them. The apex of each elytron is slightly obliquely truncated; the sutural angle is very acute; and the outer angle is dentiform.

### 3. **Dicerca propinqua.** (Tab. I. fig. 12.)

*D. æneæ* affinis et sat similis; thorace angustiore; elytris nitidioribus, fortiter punctato-striatis, ad apicem angustatis, productis, humeris prominulis.

Long. 10 lin.

*Hab.* Mexico, Juquila (*Boucard, coll. Sallé*).

Very close to the preceding, but with the thorax rather narrower, somewhat straight at the sides, and only a little sinuate before the posterior angles. The elytra have the shoulders more prominent; and the apex is more narrowed and prolonged; the apex of each is obliquely truncated; and both the sutural and external angles of the truncature are more distinctly dentiform. The thorax is very strongly

and irregularly punctured; the punctures are close on the disk and crowded at the sides; on the sides, before the middle, there is a small spot of fulvous pile. The elytra are shining, somewhat regularly and very strongly punctate-striate; the interstices very narrow, slightly confused at the sides: on the side, below the shoulder, there is a small round pubescent spot; and at the middle (a little removed from the margin) is a transverse spot. The sculpture below resembles that of the preceding species. The apex of the abdomen is gently emarginate, with the angles obtuse.

There is a second specimen from M. Sallé's collection, which differs in having the elytra much more strongly punctured, and the striæ are almost entirely lost. This may belong to a distinct species; but I think it more likely to be a variety.

## BUPRESTIS.

*Buprestis*, Linnæus, Syst. Nat. ed. x. p. 408 (1760).

The species of this genus, about fifty in number, are distributed through North and Central America, Europe, and Siberia. Species are also recorded from Canaries, Egypt, Nepal, and Japan.

### 1. **Buprestis catoxantha.** (Tab. I. fig. 13.)

*Buprestis variegata*, Lap. & Gory, Mon. ii. p. 140, t. 34. f. 192 (name preoccupied).
*Buprestis catoxantha*, Gory, Mon. Suppl. p. 118, t. 20. f. 116.

*Hab.* Mexico, Orizaba (*Sallé*), Coatepec (*Höge*); Guatemala, Purula (*Champion*).

This insect is usually of a green colour, with purple or blue shades; the front of the thorax is yellow, with two green spots; the sides of the thorax are yellow; each elytron has a yellow stripe from the shoulder to rather beyond the middle, and a transverse spot some distance from the apex. The underside is yellow, with some few black marks. The apex of the stripe on the elytra is frequently detached as a separate spot.

A very small specimen ($5\frac{1}{2}$ lines) from Orizaba has no yellow on the head, and the yellow and black on the underside are about in equal proportions.

Two specimens from Purula are blackish, one with æneous, the other with purple reflections; there is a single longitudinal yellow stripe on the front of the head; and the elytra have an additional yellow spot near the suture at the apex of the elytron.

### 2. **Buprestis piliventris.** (Tab. I. fig. 17.)

Elongata, lanceolata, parum convexa, cuprea, subopaca; thorace crebre punctato, linea mediana elevata lævi viridi; elytris purpurascentibus, confertim punctatis, costatis, singulis vitta viridi ornatis; corpore subtus albo-piloso.

Long. 6–$8\frac{1}{2}$ lin.

*Hab.* Mexico, Chiapas (*Sumichrast, coll. Sallé*).

Of a more lanceolate form than *B. aurulenta*, Linn., which it somewhat resembles;

but it is also less bright in colour, with only a stripe of green on the elytra, and the channel on the thorax is replaced by a smooth raised line. The thorax is less deflexed at the sides and anterior angles than in *B. aurulenta*, with strong punctures irregularly placed, leaving irregular smooth intervals on each side of the disk; on each side of the median ridge, along the front margin, and at the sides, the punctures are smaller and much closer, crowded together at the sides. The posterior angles are less acute than they are in *aurulenta*. The elytra are more gradually narrowed towards the apex; dull coppery purple, with the space between the first and second costæ green; densely punctured, as in *aurulenta*. Each elytron has four costæ (besides the short scutellar one); the first and second extend nearly to the apex, a little more raised than is usual in *aurulenta*; the third is fine, scarcely raised, somewhat interrupted, and does not extend much beyond the middle; the fourth is also very fine, a little more elevated than the third, and extends from some distance below the shoulder nearly to the apex. The apex of each elytron is obliquely truncated, the sutural angle is moderately acute, the outer angle slightly dentiform. The punctuation of the underside of the insect is somewhat similar to that in *aurulenta*; but that on the abdomen is more equally distributed, and at the sides of the basal segment it is less close and finer.

### 3. **Buprestis biplagiata.**

Elongata, elliptica, cuprea, supra aureo-viridis; thorace crebre punctato, plagis duabus nitidis margineque cupreis; elytris confertim punctatis, quadricostatis, sutura margineque cupreis.
Long. 8 lin.

*Hab.* Mexico, San Luis Potosi (*Sallé*).

This species closely resembles the preceding (*B. piliventris*); but the copper-colour is not so red, and is confined to the margins of the thorax and two patches on the disk, and to the suture and margins of the elytra. The thorax is very similar; the median raised line is the same, but on each side of the disk there is a much more clearly defined smooth patch, which is sparingly punctured. The elytra differ in having the scutellar stria almost confounded with the suture; the third costa is smooth and shining, and, although abbreviated posteriorly, is as well defined as the first and second. The apex of each elytron is obliquely and very slightly truncated, the outer angle not dentiform. The sculpture of the body beneath is very similar; but the sides of the basal segment of the abdomen are more strongly and more closely punctured, and its margin (especially at the sides), as well as that of the other segments, is smooth.

### 4. **Buprestris ventralis.**

Elongata, elliptica, æneo-viridis, subtus aureo tincta; thorace crebre punctato, linea mediana nitida, margine laterali ipso cupreo; elytris sutura marginibusque cupreis, sutura costisque utrinque quatuor parum elevatis, abdomine parce punctulato.
Long. 9 lin.

*Hab.* Mexico (*Höge*).

Also very close to the two preceding species, and is of the same form and general characters. The thorax is coarsely and irregularly punctured, the punctures crowded together, and smaller at the side. There is no distinct smooth patch on each side of the disk; and the median smooth line is scarcely raised. The elytra have the suture flattened, especially at the base; the scutellar costa and the base of the first costa are confounded with the smooth sutural area; the first stria is consequently only distinct posteriorly; this and the second and third are flattened, and are of a purple colour; the fourth costa is slightly raised, and is included in the coppery margin. The apex of each elytron is obliquely truncate as in *B. piliventris*; but the external angle is not so dentiform. The abdomen has the middle of all the segments and the whole of the second, third, and fourth segments very sparingly and very finely punctured; the basal segment is moderately thickly punctured at the sides.

### 5. **Buprestis picta.**

Elongata, fusiformis, convexa, parum nitida, ænea aureo tincta; thorace crebre punctato, medio linea lævi, angulis anticis rufo-ochraceis, posticis incurvatis; elytris punctato-striatis, interstitiis evidenter punctatis, singulis lineis duabus ochraceis ornatis.

Long. 6 lin.

*Hab.* Mexico (*coll. Brit. Mus.*).

A species closely resembling *B. lineata*, Fabr., in general form, colour, and appearance, but with the thorax of the same form as in *B. hæmorrhoidalis*, Herbst; *i. e.* the posterior angles are not divergent, but rather turned inwards. The thorax is strongly and closely punctured, with a distinct smooth median line. The striæ of the elytra are not quite so strong as in *B. lineata*; and the punctuation on the interstices is also less strong.

## CINYRA.

*Cinyra*, Lap. & Gory, Mon. ii. 1837, p. 157.
*Leptia*, Dejean, Cat. 1837, p. 89.

Species of this genus are recorded from Cuba, Mexico, Brazil, and Cayenne. One (*C. spilota*, Hope) is from Australia; but, being known to me only from description, I am unable to say whether it belongs properly to this genus or not.

### 1. **Cinyra costulata.** (Tab. I. fig. 20).

*Buprestis* (*Cinyra*) *costulata*, Lap. & Gory, Mon. ii. p. 159, t. 39. f. 220.
*Leptia polystigma*, Chevr. Silb. Rev. v. p. 78.

*Hab.* Mexico, Vera Cruz (*Sallé*).

### 2. **Cinyra frontalis.** (Tab. I. fig. 19.)

Elongata, angusta, nitida, nigro-ænea; thorace subparallelo, fortiter punctato, canaliculo mediano bene impresso integro; elytris multicostatis, striis punctatis et in striis punctis plurimis majoribus albo-tomentosis, apice quadridentato.

Long. $8\frac{1}{2}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

This species resembles *C. costulata*, Lap. & Gory, in general form, but is more parallel and narrower posteriorly. Head *very* coarsely punctured. Thorax broadest at the posterior angles, gradually (but very slightly) narrowed towards the front; the punctures are larger than in *C. costulata*, and are irregularly scattered over the disk, much closer towards the sides, especially in the place occupied by the longitudinal sublateral impression of *C. costulata*; but there is no distinct impression, except close to the base; the median channel is entire, and strongly impressed. Each elytron has about nine strongly impressed striæ (which, however, do not extend to the scutellar region), the interstices very convex, the second and fourth a little more costiform than the others; the striæ (which do not extend to the base of the elytra) have a series of small punctures, with frequent larger punctures, which are brassy and more or less filled with white pile; the interstices towards the sides have a few small punctures. The apex of each elytron is very obliquely truncated; and both the sutural and outer angle are strongly and acutely dentiform, much more so than in *C. costulata*.

## MELANOPHILA.

*Melanophila*, Eschscholtz, Zool. Atl. i. p. 9 (1829).
*Trachypteris*, Kirby, Faun. Bor.-Am. iv. p. 158 (1837).
*Oxypteris*, Kirby, ibid. p. 160 (1837).
*Apatura*, Lap. & Gory, Mon. ii. 1841, p. 1.
*Diana*, Lap. & Gory, ibid. p. 155.

The species of this genus occur throughout North America as far north as Vancouver's Island and Hudson's Bay, and in Cuba, Brazil, Guiana, &c. In the Old World they are found in Europe, Persia, Mongolia. Several species are also recorded from West and South Africa.

### 1. **Melanophila viridiobscura.** (Tab. I. fig. 18.)

*Apatura viridiobscura*, Lap. & Gory, Mon. ii. p. 5, t. 2. f. 8[1].

*Hab.* Mexico.—Guiana, Cayenne[1]; Amazons, Villa Nova (*Bates*).

This species was originally described from Cayenne; but there is a specimen in the British-Museum collection from Mexico which agrees well with one compared with the type by Mr. Edward Saunders.

### 2. **Melanophila limbata.**

Viridi-ænea, aureo micans; thorace confertim punctato, lateribus parum arcuatis, basi utrinque fovea impressa; elytris foveolis quatuor impressis, crebre punctulatis, marginibus læte rufo-cupreis.
Long. 5 lin.

*Hab.* Panama, Volcan de Chiriqui, 2000 to 3000 feet (*Champion*).

*Var.* Olivaceo-ænea.

*Hab.* Nicaragua, Chontales (*Janson*).

This species in general form and appearance closely resembles *M. inflammata*, Lap. & Gory; the punctuation of the thorax, however, is rather less strong, and almost vanishes at the extreme base. The elytra are very differently sculptured and are more shining; the punctures are fine and clearly defined, moderately close, but not at all crowded, and there is no appearance of rugosity, except at the lateral margin. There are two subconfluent impressions at the extreme base of each elytron, more marked than in *M. inflammata*; there are two round deep impressions on the disk of each elytron—one a little before the middle, the other (nearer the margin) halfway between that and the apex; these impressions are more marked than in *M. inflammata*, and the margins are more strongly serrate than in that species.

Two examples from Chontales differ in being of a deep bluish green, and the margins are of a duller red.

### 3. **Melanophila atra.**

*Melanophila atra*, Gory, Mon. Suppl. p. 74, t. 13. f. 73[1].

*Hab.* Mexico, Orizaba (*Sallé*); Nicaragua, Chontales (*Belt*).—Colombia (*coll. Brit. Mus.*); Guiana, Cayenne[1].

### 4. **Melanophila notata.**

*Apatura notata*, Lap. & Gory, Mon. ii. p. 4, t. 1. f. 5[1].

*Hab.* North America[1] (*coll. Brit. Mus.*).—Mexico, Chiapas (*Sumichrast, coll. Sallé*).

The three Mexican specimens differ from the North-American examples in the British Museum in having the spots confluent and forming a pattern; but I see no other difference to induce me to consider them more than varieties.

## TETRAGONOSCHEMA.

*Tetragonoschema*, Thomson, Arch. Ent. i. p. 116 (1857).

This genus is founded on *Anthaxia quadrata*, Buquet (Rev. Zool. 1841, p. 194), from Haiti. A second species has been described from Chili, and there is a third species in the British Museum from Monte Video.

### 1. **Tetragonoschema humeralis.** (Tab. II. fig. 1.)

Breviter oblonga, depressa, nigro-cyanea; elytris transversim biimpressis, cyaneis (perparum viridi tinctis), humeris plaga rufa ornatis.

Long. 2–2½ lin.

*Hab.* Guatemala, San Gerónimo (*Champion*).

This beautiful species resembles *T. quadrata*, Buquet, in general form (see Thomson, Arch. Ent. i. t. 10. f. 2). It is of a deep blue-black colour, with the sides of the thorax

and elytra more distinctly blue. The forehead is somewhat concave, extremely delicately reticulate. The thorax is finely reticulate, but is nearly smooth on the disk. The elytra are so extremely delicately reticulate that they appear smooth until they are examined with a strong magnifying-glass, but the humeral region is rugulose. The shoulders are bright coppery red; this colour extends for rather more than half the length of the elytra, and at the base approaches near to the scutellum.

## POLYCESTA.

*Polycesta*, Solier, Ann. Soc. Ent. Fr. ii. p. 281, t. 11. f. 11 (1833).
*Nemaphorus*, Solier, Gay's Hist. Chili, iv. p. 490.

The species of this genus are found throughout America, at least as far north as Philadelphia; in the Old World in Barbary, throughout Africa, and in Madagascar.

### 1. **Polycesta montesuma.**

*Polycesta montesuma*, Lap. & Gory, Mon. ii. p. 4, t. 1. f. 4.

*Hab.* Mexico.

There is a specimen in the British Museum (from Oaxaca) which may perhaps be this species; but the first costa of the elytra is only one third the length of the elytra, and not two thirds as described.

### 2. **Polycesta velasco.**

*Polycesta velasco*, Lap. & Gory, Mon. ii. p. 5, t. 1. f. 6.

*Hab.* Mexico (*Sallé*).

A single example from M. Sallé's collection seems to be referable to this species.

## HYPERANTHA.

*Hyperantha*, Mannerheim, Bull. Mosc. 1837, p. 99.

The species of this genus are found in South America, as far south as Monte Video.

### 1. **Hyperantha interrogationis.**

*Buprestis interrogationis*, Klug, Ent. Bras. ii. p. 424, t. 40. f. 4[1].
*Pœcilonota interrogationis*, Lap. & Gory, Mon. ii. p. 5, t. 1. f. 6.
*Hyperantha consobrina*, Lucas, Voy. Cast. pt. vii. p. 62, t. 4. f. 2.

*Hab.* Mexico (*Sallé*); Nicaragua, Chontales (*Belt*).—Venezuela; Brazil[1] (*coll. Brit. Mus.*).

## CONOGNATHA.

*Conognatha*, Eschscholtz, Zool. Atlas, i. p. 9 (1829).
*Pithiscus*, Solier, Gay's Hist. Chili, iv. p. 491.
*Stigmodera* (part.), Lap. & Gory, Mon. ii.

The species of this genus, some fifty in number, are distributed throughout South America, except one, which is from St. Domingo. I have only seen two specimens from Central America, which are as follows:—

### 1. **Conognatha octoguttata.** (Tab. II. fig. 3.)

Cyaneo-nigra, nitidissima, subtus cyanea; thorace antice oblique angustato, discrete subtiliter punctato, angulis posticis supra impressis, scutello cordiformi, lævi, medio viridi; elytris flavis, leviter subtiliter punctato-striatis, guttis octo apiceque late cyaneo-nigris, abdomine pallide flavo.

Long. 9½ lin.

*Hab.* Mexico, Playa Vicente (*Sallé*).

This species is flatter and broader posteriorly than any species known to me, and has the elytra more obtuse at the apex. It is allied to *C. badenii*, Saund. (Trans. Ent. Soc. 1872, p. 250, t. 6. f. 1), but has more diverging posterior angles to the thorax, more delicate punctuation, less transverse scutellum, and the serration at the apex of the elytra is stronger.

### 2. **Conognatha bifasciata.** (Tab. II. fig. 8.)

Elongata, parallela, nitida, cyaneo-viridis; thorace convexo, antice parum angustato, angulis posticis vix divergentibus, scutello sat elongato; elytris nigro-cyaneis (ad humeros et apicem ipsum cyaneis), postice sulcatis, fasciis duabus (una ante medium, altera post medium) flavis, apice obtuse rotundato denticulato.

Long. 12 lin.

*Hab.* Panama, Chiriqui.

This species belongs to a small group of species (*C. eximia*, Saund., *C. proserpina*, Th., and *C. chabrillacii*) which have the elytra scarcely narrowed at the apex, and have the denticulation commencing behind the yellow band.

It differs from all these in having two yellow bands on the elytra. From *C. eximia* it differs, moreover, in having the thorax of a very different form, slightly narrowed in front, and with the posterior angles much less acute and less diverging. In this respect it agrees more nearly with *C. trizonata*, L. & G., which should also perhaps be included in this group.

## TRINCOPYGE.

*Trincopyge*, LeConte, Journ. Acad. Nat. Sci. Philad. ser. 2, iv. p. 17 (1858).

### 1. **Trincopyge alacris.**

*Trincopyge alacris*, LeConte, Journ. Acad. Phil. ser. 2, iv. p. 17 (1858) Trans. Am. Phil. Soc. n. s. xi. p. 219, t. 12. f. 2.

*Hab.* New Mexico.—Mexico, Guadalajara (*Sallé*).

## PTOSIMA.

*Ptosima,* Solier, Ann. Soc. Ent. Fr. ii. p. 277, t. 10. f. 8 (1833).

The species of this genus, some dozen in number, are found in the United States, Europe, South Africa, India, China, and the Philippine Islands.

### 1. **Ptosima læta.**

Cylindrica, nigro-cyanea, nitida, griseo-albo pubescens; capite creberrime subtiliter punctato; thorace latera versus nigro-velutino, creberrime sat fortiter punctato, linea mediana (antice abbreviata) lævi; elytris evidenter striato-punctatis, striis suturalibus et omnibus ad apicem impressis, interstitiis uniseriatim punctatis, vitta humerali lata fasciaque ante apicem (ad suturam interrupta) flavis.
Long. 4 lin.

*Hab.* MEXICO, Playa Vicente (*Sallé, Brit. Mus.*).

Resembles *P. undecimmaculata,* Hbst., in form and sculpture, but the punctuation of the thorax is closer and finer. The humeral spot does not cover the shoulder.

## ACMÆODERA.

*Acmæodera,* Eschscholtz, Zool. Atlas, i.p. 9 (1829).

Species of this genus are found throughout America and Africa, in Southern Europe, in Persia, Syria, &c., and two or three species are recorded from India.

### 1. **Acmæodera viridissima.**

*Acmæodera viridissima,* Chevrolat, Col. Mex. fasc. iv.
*Acmæodera viridescens,* Lap. & Gory, Mon. i. p. 5, t. 1. f. 6.
*Acmæodera viridissima,* Spinola, Ann. Soc. Ent. Fr. vii. p. 369.

*Hab.* MEXICO (*Brit. Mus.*).

### 2. **Acmæodera cuprina.**

*Acmæodera cuprina,* Spinola, Ann. Soc. Ent. Fr. vii. p. 367.
*Acmæodera hirtula,* Gory, Mon. Suppl. p. 29, t. 5. f. 27.

*Hab.* MEXICO, Alvarez Mountains (*Dr. Palmer*), Jalapa (*Höge*), Parada (*Boucard, coll. Sallé*).

### 3. **Acmæodera kaupii.**

*Acmæodera kaupii,* Thomson, Typi Buprestidarum, 1878, p. 58.

*Hab.* GUATEMALA.

I only know this species from description. It is compared to *A. flavomarginata,* Chev., but is uniform æneous, broader and more triangular, with more reticulate sculpture on the elytra. It appears from these characters to be more allied to *A. cuprina,* Spin.; but I know no species which has the apex of the elytra "truncate and minutely plurispinose;" an approach to this, however, is seen in my *A. flavosparsa.*

### 4. **Acmæodera corrosa.**

*Acmæodera corrosa*, Thomson, Typi Buprestid. 1878, p. 58.

*A. kaupii* "simillima, vero: prothorace lateribus posticis minus dilatato, medio magis sparsim punctato; elytris granulatione omnino diversa, magis grossa, intricata, irregulari; abdominisque punctulatione multum magis lævi, subito differt.

"Long. 12 mill., lat. 5 mill."

*Hab.* Mexico.

As this species is unknown to me, I give the original description in full.

### 5. **Acmæodera regularis.** (Tab. II. fig. 2.)

*A. cuprinæ* affinis, sed angustior, magis elongata et attenuata, nigro-cyanea; thorace crebre punctato, elytris fortiter striato-punctatis.

Long. $6\frac{1}{2}$ lin.

*Hab.* Costa Rica (*Brit. Mus.*).

This species is near to *A. cuprina*, but is much more elongate, and has the elytra regularly narrowed to the apex. The head is closely and rather finely punctured, and has a short longitudinal ridge on the vertex. The thorax is like that of *A. cuprina*, but the punctuation is perhaps a trifle less strong, and the lateral impression has a little more the appearance of a round fovea. Elytra more as in *A. flavomarginata*, but still more elongate. The suture is similar, but has a single line of fine punctures. The punctures forming the rows are distinctly larger than in that species, and are generally rather elongate, those in the first and second rows are somewhat distant from each other; the second interstice is a little raised at the base, and the fourth is very slightly raised for its whole length; all the interstices are sparingly punctured, each puncture bearing a stiff black hair. Underside of the insect brassy; the prosternum strongly punctured; the sides of the abdomen with round shallow punctures, the middle delicately punctured.

### 6. **Acmæodera lateralis.**

*Acmæodera lateralis*, Chev. Col. Mex. fasc. i.; Lap. & Gory, Mon. i. *Acm.* p. 3, t. 1. f. 3; Spinola, Ann. Soc. Ent. Fr. vii. p. 360.

*Hab.* Mexico, Puebla (*Sallé*).

### 7. **Acmæodera flavomarginata.**

*Buprestis flavomarginata*, Gray, Griffith's Anim. Kingd. xiv. p. 358, t. 31. f. 2.

*Acmæodera flavomarginata*, Chevrolat, Col. Mex. fasc. iii. 1834; Lap. & Gory, Mon. p. 2, t. 1. f. 2; Spinola, Ann. Soc. Ent. Fr. vii. p. 360.

*Hab.* North America, United States, California (*Crotch*, *Mus. Brit.*).—Mexico, Guanajuato (*Dugès*, *coll. Sallé*), Almolonga, Cordova (*Höge*), Oaxaca (*Sallé*); Guatemala, San Gerónimo (*Champion*).—Guadaloupe? Chili?

In Mr. E. Saunders's 'Catalogue of Buprestidæ' the locality against this species is Guadaloupe, but (although it is not an unlikely habitat for the species) I know of no other authority for it. There is a specimen in the British Museum which appears to be marked Chili, but the label is not distinct. M. Chevrolat, in his Coleoptera of Mexico, gives a reference to Griffith's 'Animal Kindgom,' but adds "sine descriptione," which is misleading, as Gray fairly describes the species.

### 8. **Acmæodera flavosparsa.** (Tab. II. fig. 4.)

*A. cuprinæ* affinis, nigro-ænea, nitida, pilosa; thorace fortiter punctato, disco concavo, lateribus impressis confertim punctatis; elytris gradatim bene attenuatis, dimidio apicali guttis nonnullis notato, fortiter striato-punctatis, latera versus clathrato-punctatis, interstitio quarto sextoque elevatis.

Long. 5–5½ lin.

*Hab.* Mexico (*Coffin, Mus. Brit.*).

This species comes nearest to *A. cuprina*, but is of different form and is of a brassy black colour. The head is closely punctured, but has a short smooth line in the middle. The thorax is very broad, broadest at the base, obliquely narrowed anteriorly, deeply excavated in the middle (more so than in *A. cuprina*), sloping down at the sides, with a round impression near the base; strongly but not very thickly punctured on the raised parts, very closely punctured at the sides. The elytra are at the base as broad as the thorax, gradually narrowed to the apex, flattened on the disk; the apical half with numerous orange-yellow spots, which in one specimen partially coalesce and form four irregular patches on the sides; the punctures which form the rows are deep, generally elongate-ovate, not crowded together as in *A. cuprina*, but those which would form the fifth and sixth rows and the seventh and eighth unite transversely and form double-sized punctures; the third interstice is very narrow and interrupted and partly hidden by the wider and elevated fourth interstice; the fifth interstice is only traceable at the bottom of the large punctures; the sixth is distinct and elevated (but lost posteriorly); the seventh is lost in the large punctures; the eighth is narrow.

### 9. **Acmæodera rubronotata.**

*Acmæodera rubronotata,* Lap. & Gory, Mon. i. p. 5, t. 1. f. 5[1].

*Acmæodera hæmorrhoa,* LeConte, Proc. Ac. Phil. 1858, p. 69[2]; Tr. Am. Phil. Soc. ser. 2, xi. p. 223, t. 12. f. 4.

*Acmæodera stellaris,* Spinola?, Ann. Soc. Ent. Fr. vii. p. 364.

*Hab.* Texas, Laredo[2].—Mexico, Izucar, Puebla, Cuernavaca, Orizaba (*Sallé*).—"Chili"[1].

This species was originally described as from Chili, but no doubt by mistake.

### 10. **Acmæodera impluviata.**

*Acmæodera impluviata,* Mann. Bull. Mosc. 1837, pt. viii. p. 26[1].

*Hab.* Mexico, Oaxaca[1], Tehuantepec (*Sallé*); Nicaragua, Chontales (*Belt*).

If I have correctly identified this species, it is extremely close to *A. rubronotata*, L. & G., and agrees with it in every respect, except in having the head and thorax black (with a faint tinge of steel-blue), the elytra dark steel-blue, with numerous small yellow dots, but sometimes without spots, and in having the thorax a little broader and more rounded at the sides.

### 11. **Acmæodera mima.**

*Acmæodera mima*, Gory, Mon. Suppl. p. 29, t. 5. f. 26.

*Hab.* Mexico.

I only know this species from the figure and description. It would appear to differ from *A. semivittata*, LeC., only in the absence of the yellow line on the side of the thorax.

### 12. **Acmæodera croceonotata.**

*Acmæodera croceonotata*, Gory, Mon. Suppl. p. 27, t. 5. f. 24.

*Hab.* Mexico.

I am unable to identify this species with any known to me.

### 13. **Acmæodera superba.** (Tab. II. fig. 5.)

Cæruleo-viridis, aureo-micans, nigro-pilosa, subtus brevissime griseo-pilosa; thorace elytris vix latiore, disco impresso subtiliter punctato, lateribus rugoso-punctatis, supra perparum oblique impressis, leviter rotundatis, angulis posticis obtusis; elytris sat convexis, striato-punctatis, macula rotundata ad basin, altera laterali ad medium, fasciaque postice sanguineis.

Long. $5\frac{1}{4}$ lin.

*Hab.* Mexico, Puebla (*Sallé*).—Brazil (*Brit. Mus.*).

The example from Brazil has a red spot on the thorax close to the posterior angle, and the spot at the middle of the elytra is more transverse.

The coloration of this species is so unlike that of any of the other species of the genus that it is difficult to locate it satisfactorily; but, setting aside the coloration, it seems best to place it near *A. scalaris*, Mann., with which it agrees in form and general characters.

### 14. **Acmæodera scalaris.**

*Acmæodera scalaris*, Mann. Bull. Mosc. 1837, pt. viii. p. 25 [1].

*Acmæodera semivittata*, LeConte [2], Proc. Ac. Phil. 1858, x. p. 69; Trans. Am. Phil. Soc. n. s. xi. p. 227.

*Hab.* Texas, Eagle Pass [2].—Mexico, Mineral del Zimapan [1], Hacienda de Bleados, San Luis Potosi (*Palmer*), Cuernavaca, Puebla (*Sallé*).

This species has two yellow stripes reaching to the middle of the elytra, as described both by Mannerheim and LeConte. In the British Museum there is an example

labelled by Mr. Edward Saunders "*A. semivittata*, LeC., compared with type." This specimen appears to me to agree quite well with Mannerheim's description of *A. scalaris*, of which LeConte makes no mention.

The specimen from Puebla differs from all the others in having the thorax a little broader, more strongly punctured, and has a narrow yellow stripe on the apical margin of the elytra.

15. **Acmæodera picta.** (Tab. II. fig. 6.)

Nigro-ænea, nigro-pilosa, subtus ænea griseo-pilosa; thorace crebre fortiter punctato, linea laterali flava; elytris striato-punctatis, baseos linea brevi, in margine altera, postice divaricata, et in regione apicali maculis tribus transversis flavis.

Long. 4 lin.

*Hab.* Mexico, Orizaba (*Sallé*).

This species is very close to *A scalaris*, but differs in being smaller, darker in colour, and the thorax more strongly punctured. The elytra are also rather more strongly punctured, and the stripe in the middle of the base is only one quarter the length of the elytron. There is a small spot near the suture about the middle of the elytron; the lateral stripe emits a branch (just below the shoulder) which nearly (and in one example quite) joins the apex of the middle stripe; about the middle of the elytron the lateral stripe leaves the margin, but emits two short branches to the margin. Behind this there are three transverse yellow spots.

One specimen has the lateral stripe continued zigzag to near the apex of the elytron, emitting short branches on each side, as in *A. scalaris*, making five black spots on the margin.

Another specimen has the middle stripe only indicated by a spot in the middle of the base; the lateral stripe stops short soon after emitting its first branch, leaving four transverse spots beyond this.

The specimens are from various sources, the type only having the special locality "Orizaba."

16. **Acmæodera flavosticta.** (Tab. II. fig. 13.)

Obscure æneo-cuprea, nigro-pilosa, subtus ænea griseo-pubescens; thorace elytris latiore, crebre sat fortiter punctato, disco parum impresso, antice canaliculato, lateribus vix impressis, ad basin foveola rotundata; elytris obscure æneis, apicem versus violaceis, sat fortiter striato-punctatis, vitta angusta humerali guttisque plurimis ochraceis.

Long. $4\frac{3}{4}$–$5\frac{1}{3}$ lin.

*Hab.* Mexico (*Sallé, Mus. Brit.*).

This is a broad species, with the thorax rather broader than the elytra, with rounded posterior angles, and with scarcely any trace of the usual oblique impression at the sides; there is, however, a small round fovea at the base. One specimen has a small red spot on the side of the thorax, but the other examples have no trace of it. The

punctuation of the thorax and elytra is considerably stronger than in *A. scalaris*. The elytra have a narrow lateral yellow line extending to near the middle; it has a small notch just below the shoulder, and at its apex unites with a yellow spot which surrounds a black spot on the margin. There is a small oblique spot at the base near the suture, a smaller one just below this, then two spots which are sometimes united obliquely, then one or two spots near the suture, then two on the margin, the next is at the suture, and then there are two on the margin. The apical segment of the abdomen is rather broadly truncate in the male.

### 17. **Acmæodera venusta.** (Tab. II. fig. 12.)

Statura *A. flavostictæ*, sed differt thorace elytris haud latiore, angulis posticis fere rectis, lateribus minus rotundatis, supra impressione obliqua; elytris guttis plurimis parvis flavis, ad apicem utrinque maculis tribus rufis ornatis.

Long. 6 lin.

*Hab.* MEXICO (*Sallé, Mus. Brit.*).

This species somewhat resembles *A. flavosticta* in its general form and coloration. The thorax is much more finely punctured on the disk, the lateral impression is distinct and terminates in a round fovea at the base. The sides are much less rounded, and the posterior angles fit close to the elytra. The elytra have numerous small yellow spots, which seldom extend beyond one interstice, except several which unite and form a larger spot about the middle near the side; there is a single spot behind the humeral callus, another a little behind it on the margin; two about the middle of the margin (on the ninth and tenth interstices) close to the larger spot above mentioned; behind these are two others, placed similarly; then there is the first red spot, a little removed from the margin; then the second red spot, nearer the margin, and with a yellow spot outside it; and close to the apex is the third red spot. The apical segment of the abdomen is arcuately acuminate.

### 18. **Acmæodera longipennis.** (Tab. II. fig. 11.)

Elongata, sat angusta, nigro-ænea, nigro-pilosa, subtus ænea, griseo-pilosa; thorace bene transverso, antice et postice parum angustato, lateribus medio parum angulatis; elytris elongatis, flavo maculatis, supra depressis, punctato-striatis, striis juxta suturam vix impressis subtiliter punctulatis, reliquis fortiter punctatis, interstitio quarto perparum elevato.

Long. $5\frac{3}{4}$ lin.

*Hab.* MEXICO (*Sallé*).

This species is allied to *A. flavopicta*, but has the elongate form of *A. rubronotata*, with the elytra flattened on the back as in *A. flavomarginata*. The thorax is very short; at the base it is the same width as the base of the elytra, at the middle it is a little broader and is slightly but distinctly angular. The disk is not very strongly and not very thickly punctured, the basal impression is well marked, and the anterior channel very distinct; the sides are rugosely punctured, with the usual impression deep

posteriorly, shallow anteriorly and narrow. There is a small marginal spot below the shoulder, another just behind it; a larger cuneiform spot about the middle, and four or five spots along the apical margin; there is a transverse streak about halfway between the cuneiform spot and the apex; and on the second and third interstices there are several very small yellow dots. The apical segment of the abdomen is narrowed, but is slightly obtuse at the apex itself.

### 19. **Acmæodera stellaris.** (Tab. II. fig. 10.)

*Acmæodera stellaris*, Chevr. Col. Mex. fasc. viii. p. 189.

*Hab.* Mexico.

I do not know what the species is which Gory (Mon. Suppl. p. 28, t. 5. f. 25) has figured and described under this name. It cannot be the *A. stellaris* of Chevrolat, the type of which is now in the British Museum, and is narrower, differently spotted, has no lateral impression on the thorax, and belongs more nearly to the *A. pulchella* group; whilst *A. stellaris*, Gory, resembles *A. rubronotata*, but has a yellow line at the side of the thorax. The head and thorax of *A. scalaris* put on to the elytra of *A. rubronotata* would give a good idea of the species, judging from the figure.

*A. stellaris*, Chevr., of Spinola (Ann. Soc. Ent. Fr. vii. p. 364) appears to be *A. rubronotata*, but he does not describe the colours.

### 20. **Acmæodera setosa.** (Tab. II. fig. 9.)

Nigra, parum nitida; thorace confertim ruguloso-punctato, basi medio impressa, lateribus oblique foveolatis; elytris quam thorax paulo angustioribus parallelis, ad apicem angustatis, supra paulo depressis, fortiter punctato-striatis, interstitiis angustis, brevissime pallide setosis, macula parva pone humeros, altera obliqua ad medium, et duabus ante apicem flavo-ferrugineis.

Long. 3 lin.

*Hab.* Mexico (*Sallé*).

This species is allied to *A. ornata*, Fabr., but in form is somewhat intermediate between that and *A. tubulus*, Fabr. The thorax is a very little broader than the elytra, and the latter are slightly impressed on the back, so that it may well be placed near *A. ornata*. Head rather densely clothed with testaceous pubescence. Thorax very closely, rather strongly, but not deeply punctured; the disk is slightly impressed, and there is a somewhat large deep impression in the middle of the base; within each posterior angle there is a deep impression, which is carried forwards obliquely to near the anterior angle. The elytra are nearly parallel for three quarters their length and then narrow to the apex. The punctures in the striæ are strong and generally ovate. The three or four interstices nearest the suture are about the width of the punctures in the striæ, shining, each with a single line of very fine, rather remote, punctures; the following interstices are very narrow, narrower than the punctures in the striæ; the eighth is again a little broader and a little more elevated, and has its surface uneven,

almost rugulose. The transverse spot at the middle of the elytron does not quite reach the margin; it is directed obliquely upwards, and extends to the second or third interstice. In the apical region there is a longitudinal spot on the fourth and fifth interstices, with an oblique transverse spot immediately below it; and below the transverse spot is another longitudinal one on the third and fourth interstices.

Two examples have the middle and posterior spots extended and more or less united, one of them having an additional spot near the base. Another specimen has all the posterior spots very much reduced in size.

The crenulation round the apical margins of the elytra is very slight, very close, and not very acute.

### 21. **Acmæodera tubulus.**

*Buprestis tubulus*, Fabr. Syst. El. ii. p. 200.
*Buprestis culta*, Weber, Obs. Ent. p. 75.
*Acmæodera tubulus*, Lap. & Gory, Mon. i. p. 11, t. 3. f. 15.
*Acmæodera* 14-*guttata*, Lap. & Gory, Mon. i. p. 12, t. 3. f. 18.

*Hab.* North America, St. John's Bluff, Texas (*Brit. Mus.*).—Mexico (*Brit. Mus.*).

### 22. **Acmæodera exilis.** (Tab. II. fig. 7.)

Elongata, postice angustata, nigro-ænea; thorace elytris paulo latiore, confertim punctato, utrinque foveola rotundata impresso, lateribus rotundatis; elytris guttis octo flavis transversis ornatis, punctato-striatis, interstitiis uniseriatim punctatis.

Long. $2\frac{1}{5}$ lin.

*Hab.* Mexico (*Sallé*).

This species is very close to *A. tubulus*, Fabr., but is rather less convex, and decidedly more acuminate posteriorly, the elytra almost narrowed from the base. The thorax is the same form, but less convex, less strongly punctured, and the punctures are not so crowded; the fovea on each side of the base is well marked and round. The elytra are moderately strongly punctate-striate, but not so strongly as in *A. tubulus*; the dorsal interstices are flat and shining, but the surface of those towards the sides is rendered uneven by the punctures. Each elytron has four deep yellow transverse spots (or perhaps they might more properly be called fasciæ); they all touch the margin and extend to about the third interstice; the first is near the base and is directed a little obliquely downwards towards the suture; the second is about the middle of the elytron, and is somewhat curved upwards; the third is about a quarter from the apex; the fourth is subapical.

## SPHENOPTERA.

*Sphenoptera*, Solier, Ann. Soc. Ent. Fr. ii. p. 229 (1833).

The species of this genus, some hundred and fifty in number, have hitherto only been found in the Old World, where they are extensively distributed.

The following species is only provisionally included. It has much the form of *S. neglecta*, Klug, but is rather more parallel than that and almost all the species, and has a very small scutellum. Having seen only a single specimen of the species, I refrain at present from proposing a distinct genus for its reception.

### 1. **Sphenoptera purpurascens.** (Tab. II. fig. 14.)

Elongata, parallela, nitida, purpurascens; capite creberrime viridi punctato, thorace minus crebre viridi punctato, parum transverso, fere parallelo; scutello parvo, transverso; elytris thorace vix latioribus, postice gradatim angustatis ad apicem sexspinosis, evidenter striato-punctatis, interstitiis secundo quartoque ad apicem paulo elevatis.

Long. $6\frac{1}{4}$ lin.

*Hab.* Honduras (*Brit. Mus.*).

The thorax has the lateral line sloping very obliquely downwards and obliterated anteriorly. At the base of the thorax there are three punctiform impressions, one in the middle and one on each side; the base itself is straight in the middle and slightly sinuate on each side; the posterior angles are right angles. The punctures forming the lines on the elytra are not very close, but very distinct; there are a few punctures here and there on the interstices. The apex of each elytron has three spines; of these the second is a little removed from the sutural one and is a little more produced; the third is removed some distance from this, is more lateral, and very acute. The line dividing the prosternum from the flanks of the prothorax is a straight line from its commencement on the front margin to the coxal cavity. The metathoracic parapleura are very narrow, parallel, and about three times as long as broad. The posterior coxal plate is very broad internally, parallel for about half its length, then obliquely narrowed externally.

## ACTENODES.

*Actenodes*, Lacordaire, Gen. des Coléoptères, iv. p. 72 (1875).

The species of this genus are chiefly confined to Central and South America. Two occur in North America; and it appears to me that *Chrysobothris acuminipennis*, Gory, from Madagascar, and perhaps one or two other species of *Chrysobothris* from Africa, would be better transferred to *Actenodes*.

### 1. **Actenodes chalybeitarsis.**

*Belionota? chalybeitarsis*, Chevr. Col. Mex. fasc. i. 1833[1].
*Chrysobothris chalybeitarsis*, Lap. & Gory, Mon. ii. p. 2.
*Chrysobothris curvicollis*, Gory, Mon. Suppl. p. 158, t. 27. f. 153[2].

*Hab.* Mexico, Boca del Monte[1], Cordova (*Sallé*), Misantla, Plan del Rio (*Höge*); British Honduras, river Sarstoon (*Blancaneaux*); Guatemala, Izabal (*Sallé*), San Isidro, Chacoj,

Las Mercedes, El Reposo, Torola, Pantaleon, Paraiso, Mirandilla (*Champion*); NICARAGUA, Chontales (*Belt*, *Janson*).—COLOMBIA [2]; VENEZUELA (*Brit. Mus.*).

## 2. **Actenodes fulginea.** (Tab. II. fig. 15.)

Statura et color fere *A. nobilis* (Linn.). Capite cupreo, vertice viridi; thorace nigro-purpureo, vittis tribus viridi-aureis et cupreis ornato; elytris purpureis, ad medium nigris, nitidis, macula basali vittaque apicali aureo-viridibus, fasciisque duabus bene dentatis aureo-viridibus intus cupreo marginatis, regione discoidali parcius subtilissime punctulata; abdomine aureo-viridi.

Long. $5\frac{1}{2}$–9 lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

This species is extremely close to *A. nobilis* (L.), and has the markings precisely similar; but it differs in having the elytra more delicately and less closely punctured, especially in the discoidal area; this gives the elytra a more shining appearance than is the case in *A. nobilis*.

In describing this species one is met with this difficulty. Under the head of *A. nobilis* I find two species confounded: one has the elytra densely punctured and is somewhat dull. All the specimens with localities are from Cayenne.

The second is brighter in appearance, and has the punctuation of the elytra decidedly less close and more delicate. The specimens are from Ega, St. Paulo, Santarem, and Para.

I have presumed that the specimens from Cayenne are the true *A. nobilis* (L.). They are certainly the *A. nobilis* of Laporte and Gory.

The Amazonian specimens above alluded to average smaller than those from Nicaragua, are more uniform in colour, and have less coppery margining the bands on the elytra. These differences, however, are slight, and I think it better to consider them merely varieties of *A. fulginea*.

Care must be taken not to confound these species with *A. aurolineata*, which has precisely similar markings, but has more coarsely punctured elytra and a leaden-green abdomen.

## 3. **Actenodes regularis.**

*Chrysobothris regularis*, Lap. & Gory, Mon. ii. p. 32, t. 6. f. 46 [1].

*Hab.* MEXICO [1], Orizaba (*Sallé*); HONDURAS.

In the British-Museum collection there is an example from Honduras which differs from the specimen from Mexico in being smaller (only 5 lines long) and more strongly sculptured on the elytra; the head is more closely punctured, and instead of being brownish bronze is green, with a coppery hue on the vertex, and with the longitudinal furrow much deeper and violet in colour; the apical spot on the elytra is at the apex instead of being just within it.

### 4. **Actenodes bifasciata.** (Tab. II. fig. 16.)

Æneo-olivacea; thorace plus minusve purpureo tincto, sat crebre punctato, transversim aciculato, subtiliter punctulato, basi transversim leviter impressa; scutello cupreo; elytris macula basali, altera apicali, fasciisque duabus undulatis aureo-viridibus; abdomine fusco-æneo.

Long. $6\frac{1}{2}$–$7\frac{1}{2}$ lin.

*Hab.* Mexico, Orizaba (*Sallé*).

This species somewhat resembles *A. regularis*, but is broader and less parallel, differently coloured, and the thorax broader at the posterior angles, &c. Head green above, dark violet in front, strongly punctured, with scarcely any trace of longitudinal impression. Thorax very transverse, broadest at the posterior angles, slightly narrowed anteriorly, finely but not very thickly punctured, with some transverse scratches on the disk, which change into closer and subconfluent rugulæ at the sides. The usual impression on the elytra at the base is very slight. The punctuation between the bands is fine, and the punctures are well separated from each other; immediately above the first band the sculpture is decidedly stronger. The bands on the two elytra are nearly parallel to each other and form two W's, one above the other, the space between them being nearly black, and the bands not bordered with coppery.

### 5. **Actenodes lævifrons.** (Tab. II. fig. 17.)

Supra purpurea, subtus viridis; capite læte viridi, fere lævi, vertice fovea profunde impressa; thorace subtiliter sat crebre punctulato, ante basin transverse leviter impresso, basi ipsa et elevata et viridi ornata, margine antico angustissime viridi, angulis posticis extrorsum productis, acutis; elytris sat crebre subtiliter punctatis, macula basali, fasciis duabus undatis vittaque apicali viridibus; abdominis lateribus obscurioribus.

Long. $6\frac{1}{2}$–$7\frac{1}{4}$ lin.

*Hab.* Nicaragua, Chontales (*Janson*).

This species is allied to *A. rugulosa*, and should occupy a position between that and *A. hopfneri*, Gory. The head is closely and finely punctured above between the eyes, flattened in front, smooth and shining, with a few punctures placed very irregularly; there is a fine median impressed punctured line, surmounted by a deep fovea. The thorax is extremely delicately punctured, and is remarkable for the acute prominent posterior angles. The elytra have a little green colour near the scutellum and along the suture at the base: the first band consists of a crescent on each elytron; the second band is more angular and forms a very wide W; both bands are very narrowly margined with coppery. The abdomen is golden green, more æneous at the apex, with the sides tinted with purple or bluish.

### 6. **Actenodes hopfneri.**

*Chrysobothris hopfneri*, Gory, Mon. Suppl. p. 170, t. 29. f. 165[1].

*Hab.* Mexico[1], Orizaba (*Sallé*); Guatemala, San Gerónimo (*Champion*).

The specimen from Guatemala differs from the Mexican examples in having the

bands on the elytra a little straighter at the suture; the abdomen is more brightly coloured, with the coppery colour at the sides deeper and more extended.

### 7. **Actenodes calcarata.**

*Belionota calarata*, Chevr. Col. Mex. fasc. ii. p. 103 [1].
*Chrysobothris fulgurata*, Lap. & Gory, Mon. ii. p. 29, t. 6. f. 42 [1]; Mann. Bull. Mosc. 1837, p. 80.
*Chrysobothris lebasi*, Lap. & Gory, Mon. ii. p. 30, t. 6. f. 43 [2].

*Hab.* MEXICO, Zimapan [1], Orizaba (*Sallé*), Oaxaca (*Brit. Mus.*); GUATEMALA, Chacoj, Panzos (*Champion*); NICARAGUA, Chontales (*Belt*).—COLOMBIA, Carthagena [2].

### 8. **Actenodes undulata.** (Tab. II. fig. 20.)

Ænea, parum nitida, crebre sat fortiter punctata; thorace utrinque prope basin transversim impresso, angulis posticis paulo divaricatis, acutis; elytris fasciis duabus undulatis maculaque triangulari ante apicem purpureo-nigris; abdominis segmentorum suturis apiceque violaceo-nigris.
Long. $6\frac{1}{4}$–$7\frac{1}{2}$ lin.

*Hab.* MEXICO (*Sallé*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Zapote, Torola (*Champion*); NICARAGUA, Chontales (*Belt*).

This species was named both in M. Sallé's collection and in the British Museum as *A. yucatana*. I am, however, unable to find it described, and have not seen it from Yucatan. It is allied to *A. calcarata*, Chevr., but is a trifle narrower, less opaque, and the sculpture is less close and less rough; its colour is paler, more brassy, and frequently almost silvery. The thorax has the posterior angles somewhat diverging; the transverse impression at the base is only visible on each side, and in some examples is not strongly marked. The first band on the elytra is near the base; commencing on the shoulder it descends a little, then ascends nearly to the scutellum, and then turns downwards to the suture. The second band is rather broad, rather straighter; it consists of two arcs (one on each elytron) with a dilatation at the suture. The apical area of each elytron is more or less taken up by the triangular dark spot.

Two of the specimens (one from Honduras and one from Zapote) have the clypeus violet, with green angles and a green central line.

### 9. **Actenodes humeralis.** (Tab. II. fig. 19.)

Elongata, sat angusta, parum nitida, creberrime punctata, ænea; thorace postice leviter transversim impresso, angulis posticis fere rectis; elytris prope suturam costa (antice et postice abbreviata) instructis, sub humero macula roseo-cuprea ornatis; corpore subtus viridi, lateribus apiceque æneis.
Long. 6 lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

This species is nearest to *A. hopfneri*, Gory, but is still narrower. The posterior angles of the thorax are not diverging, they are right angles or perhaps a little acute: the punctuation is fine and close; the transverse basal impression is scarcely visible in the middle. The elytra have a well-marked fine costa near the suture, and there is an

indication of a second (very short) on the disk. The punctuation is closer and stronger than in *A. hopfneri*, especially a little way below the shoulders.

### 10. **Actenodes reichei.** (Tab. II. fig. 18.)

*Actenodes reichei*, Thomson, Typi Buprestid. 1878, p. 74.

*Hab.* Mexico [1], Playa Vicente, Santecomapan, Tuxtla (*Sallé*), Oaxaca (*Brit. Mus.*); Guatemala, Chacoj (*Champion*); Nicaragua, Chontales (*Janson*).

This species is described as "*obscure viridi-metallica; elytra obscure brunneo-metallica, maculis* 10, *et lineis* 2 *obliquis posticalibus viridi-cupreis, ornata.* Long. 16–17 mill." M. Thomson gives the species as *A. reichei*, Laferté, MSS., stating that it is near to, but very distinct from, "*A. desmarestii*, Gory."

In the British-Museum collection there are specimens with the label "*reichei*, Laf.," named from Laferté's collection, and therefore no doubt identical with M. Thomson's species. The description omits to mention that the ten spots are in reality frosted impressions, and their position is not stated; there are two on each elytron close to the base, subconfluent, two some way before the middle (one near the suture and the other on the margin), and a single one in the middle of the elytron, rather behind the middle.

I know of no such species as "*A. desmarestii*, Gory."

### 11. **Actenodes sallæi.**

*Actenodes sallei*, Thomson, Typi Buprestid. 1878, p. 73.

*Hab.* Mexico.

I only know this species from description, of which the following is an extract:—"Obscure metallica; elytra sutura marginibusque cuprea. Scutellum viride. Elytra pone suturam costis 2 longitudinalibus obsoletis instructa, lateribus posticis nec denticulata, apice biacuta. Tarsi obscure cyanei. Long. 13 mill."

## CHALCANGIUM, n. gen.

General form and characters of *Chrysobothris*. Eyes widely separated above. Antennal fossa moderately large, shallow, and round. Prosternal process only slightly angular on each side immediately behind the anterior coxæ. The metasternum not emarginate in front. Anterior femora simple, not dentate. Tarsi very slender; the third joint with its apical angles produced into two slender spur-like processes, as in *Actenodes*, but in a less degree, and not diverging; the fourth joint very small (not produced into a lamina below), almost hidden in the third joint. Abdomen with a fine median raised line on the second to fifth segments. Thorax narrower than the elytra, the posterior angles fitting close to the elytra. Scutellum small, elongate, triangular.

The species for which I propose this new genus has somewhat the appearance of *Chrysobothris costifrons*, but is more elongate and has no impressions on the elytra. The almost simple form of the prosternal process, the unarmed anterior femora, and the peculiar structure of the tarsi necessitate the creation of a new genus for its reception.

### 1. **Chalcangium longipenne.** (Tab. III. figg. 1, 1 *a*.)

Elongatum, sat angustum, parum convexum, æneum; thorace transverso, creberrime punctato, ad basin subito paullo angustato, angulis posticis acutis; elytris quam thorax latioribus, postice gradatim angustatis, bicostatis, confertim subtiliter punctatis, guttis irregularibus nigris lævibus, marginibus ad apicem acute serratis.

Long. 10 lin.

*Hab.* Mexico, Puebla (*Sallé*).

The head is densely punctured and rugose in front. The margin of the clypeus is slightly flexuous, not notched nor emarginate in the middle, where it is shining and olive-green. The antennæ are black. The thorax has the punctures on the disc moderately close, and the smooth interspaces bronzy black, the sides being coarsely punctured; the posterior angles are impressed above, and just above this there is on each side an ovate oblique impression. The scutellum is smooth, coppery, very acutely prolonged. The elytra are one fifth broader than the thorax; the surface is finely and very densely punctured, but there are very numerous, irregular, subconfluent, nearly black spots or spaces. Each elytron has two costæ: the first is entire, more distinct at the apex than at the base; the second is short, and does not extend to the base or apex; besides these there is a short costa near the scutellum, this costa joining the suture not far from the base, and there is a short submarginal costa at the apex. The prosternal process is smooth and shining, pitchy at the apex. The first segment of the abdomen has a slight median impressed line; the second to the fifth segments have a fine median raised line, the fifth segment having, moreover, a raised line on each side.

## COLOBOGASTER.

*Colobogaster,* Solier, Ann. Soc. Ent. Fr. ii. p. 308 (1833).

This genus was proposed by Solier for *Buprestis quadridentata*, Fabr. It should, however, scarcely be separated from *Chrysobothris*; I merely adopt it here as a matter of convenience for the large species allied to *C. quadridentata*, these having simple anterior femora.

### 1. **Colobogaster puncticollis.** (Tab. III. fig. 2.)

Elongata, depressa, sat nitida, viridi-aurata; capite dense evidenter punctato; thorace quam longitudo duplo latiore, antice oblique angustato, supra utrinque planato, crebre punctato, postice juxta scutellum parum convexo fere lævi, disco nigro-violaceo, linea mediana viridi, lateribus post medium fere parallelis, perparum sinuatis; scutello elongato, acuminato, obsolete parce punctulato; elytris nigro-violaceis, ad basin thorace vix latioribus, apicem versus paullo angustatis, creberrime subtiliter punctulatis, costis sex parum elevatis instructis, apice leviter emarginato; abdominis segmentis late cyaneo marginatis; segmento ultimo late truncato, medio triangulariter inciso, utrinque leviter sinuato, angulis lateralibus acutis.

Long. 16 lin.

*Hab.* Mexico, Orizaba (*Sallé*); Nicaragua, Chontales (*Janson*).

The forehead has a shallow horseshoe-shaped impression. The thorax differs in form from that of any other species known to me; it has a very slight shallow impression on each side near the front margin, and a more evident one behind it; nearer to the lateral margin and behind the lateral angulation there is a small round impression. The scutellum is rather more than half the length of the thorax, very broad at the base, very acuminate at the apex. Each elytron has three costæ, and there is a slight indication of a humeral one. The under flanks of the prothorax are closely punctured (finely and confluently so near the coxæ); but there is a short, smooth, arcuate line, nearly parallel with the posterior margin, commencing at the lateral angulation, and extending towards, but not reaching, the line of the prosternum. This smooth line is generally present in the species of this group; usually, however, it is a raised line, and much more directed forwards.

### 2. **Colobogaster cyanitarsis.**

*Colobogaster cyanitarsis*, Lap. & Gory, Mon. ii. p. 6, t. 1. f. 4 [1].

*Hab.* Mexico, Oaxaca (*Sallé*).—Colombia; Brazil[1]; Bolivia (*Brit. Mus.*).

A single example from M. Sallé's collection appears to me to be referable to this species. It differs, however, from any specimens in the British-Museum collection in having the posterior angles of the thorax obliquely turned in. This is not a character upon which I should venture to describe a new species from a single example, as individuals in this genus are somewhat liable to variation in this respect.

### 3. **Colobogaster infra-viridis.**

*Colobogaster infra-viridis*, Thoms. Typi Bupr., Append., i. p. 39 (1879)[1].

*Hab.* Mexico[1].

M. Thomson states that this species differs from *C. cyanitarsis* in having the thorax somewhat hexagonal. It does not, however, appear to be the insect from M. Sallé's collection, described above as *C. puncticollis*.

### 4. **Colobogaster chlorosticta.**

*Buprestis chlorosticta*, Klug, Nova Acta Acad. Leop.-Carol. Nat. Cur. xii. pt. 2, p. 421 (1825)[1].

*Colobogaster hopei*, Lap. & Gory, Mon. ii. p. 7, t. 1. f. 5 [2].

*Hab.* Nicaragua, Chontales (*Janson*).—Colombia; Brazil [1 2] (*Brit. Mus.*).

A single example from Nicaragua only differs from Brazilian specimens in having the elytra less shining, and with the green spots before the middle confluent and forming a band.

## CHRYSOBOTHRIS.

*Chrysobothris*, Eschscholtz, Zool. Atlas, i. p. 9 (1829); Horn, Trans. Am. Ent. Soc. xiii. p. 67 (1886).

Species of this genus are found in all parts of the world.

### 1. **Chrysobothris sex-punctata.**

*Buprestis sex-punctata*, Fabr. Syst. Eleuth. ii. p. 206[1].

*Colobogaster sex-punctata*, Lap. & Gory, Mon. ii. p. 9, t. 2. f. 7[2] (nec Montrouz.).

*Hab.* Nicaragua, Chontales (*Belt*); Panama (*Janson*).—South America[1], Cayenne[2], Brazil.

I think it is open to question whether the Brazilian specimens usually associated with *C. sex-punctata* (Fabr.) really represent the same species; Central-American examples appear to me to be less strongly sculptured.

### 2. **Chrysobothris ichthyomorpha.** (Tab. III. fig. 3.)

*Chrysobothris ichthyomorpha*, Thoms. Typi Bupr., Append., i. p. 42 (1879)[1].

*Hab.* Mexico[1], Orizaba, Playa Vicente (*Sallé*), Juquila (*Höge*); Guatemala, Sabo in Vera Paz, Capetillo (*Champion*), Yzabal (*Sallé*); Nicaragua, Chontales (*Belt*); Costa Rica (*Sallé*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

In examining a long series of this species I find two forms of the terminal segment of the abdomen among the females (Tab. III. figg. 3 *a*, 3 *b*), that represented by fig. 3 *a* being the commoner. Both forms are found in the same locality, and the difference cannot be specific. The male has the apex of the terminal segment sinuate, with a semicircular emargination in the middle (Tab. III. fig. 3 *c*).

### 3. **Chrysobothris thomsoni.**

*Chrysobothris collaris*, Thoms. Typi Bupr. 1878, p. 76[1] (nec Deyr.).

*Hab.* Costa Rica (*Van Patten*); Panama, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2500 to 4000 feet, David, Tolé (*Champion*).—Colombia (*Brit. Mus.*); Venezuela, Caracas[1].

Only distinguishable from the preceding species by the coppery-red posterior angles of the thorax; but a large series from Bugaba shows no variation.

### 4. **Chrysobothris belti.** (Tab. III. fig. 4.)

Obscure cupreo-ænea, nitida; thorace lateribus sinuatis, crebre punctulato; elytris purpureo-nigris, singulo guttis quinque læte viridibus ornato.

Long. $6\frac{1}{2}$ lin.

*Hab.* Nicaragua, Chontales (*Belt*).

This species is very close to *C. duplicata*, Chevr. The thorax, however, is rather less

strongly angular at the sides, and there is a very slight impression on the basal lobe; the punctuation is close and fine, with a tendency to become confluent transversely, except near the anterior angles, where it is obliquely confluent. The elytra are not very convex, and are without costæ. Each elytron has a green spot at the base, and a small one on the shoulder; a small round spot near the suture below the scutellum; a lunate spot just before the middle, touching the margin (nearly divided into two); and two other spots rather behind the middle. The margins of the abdominal segments, and the apex of the terminal one, are nearly black; the latter with three acute teeth (Tab. III. fig. 4 *a*). The head is concave in front, the upper part of the forehead projecting, the lower edge of the projection straight.

### 5. **Chrysobothris capitata.**

*Chrysobothris capitata*, Lap. & Gory, Mon. ii. p. 19, t. 4. f. 28[1].
*Chrysobothris designata*, Thoms. Typi Bupr., Append., i. p. 43 (1879)[2].

*Hab.* MEXICO[2], Cordova, Juquila (*Sallé*); GUATEMALA, Cubilguitz, Tamahu, Cerro Zunil 4000 to 5000 feet, Las Mercedes 3000 feet, Pantaleon 1700 feet, Torola 1000 feet (*Champion*); HONDURAS[1]; NICARAGUA, Chontales (*Belt*, *Janson*); COSTA RICA, Cache (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This species varies from $5\frac{1}{4}$–$6\frac{1}{2}$ lin. in length. The colour is generally uniform brassy; but the elytra are frequently darker, and sometimes quite deep purple. Some examples have the thorax and abdomen less strongly sculptured than others. I cannot, however, associate any of these differences with size, sex, or locality. The males, which are rare, have the head golden-green; and the abdomen deeply emarginate at the apex instead of tridentate as in the female.

I forwarded a female example to Prof. Westwood to compare with the type of *C. capitata* in the Hopean Collection, and received the following note:—"The only appreciable difference is that the face in our specimen is bright golden-green, with a small fulvous-red spot with sharp margin occupying nearly the apex of the facial triangle between the inner margin of the top of the eyes."

The posterior spot on the elytra is sometimes (but rarely) divided into two.

Specimens of this species were received from M. Sallé with the name *C. designata*, Thoms., attached; and I believe this determination is correct, but M. Thomson[2] gives the apex of the abdomen as bidentate instead of tridentate.

### 6. **Chrysobothris gemmata.**

*Chrysobothris gemmata*, Lec. Proc. Acad. Phil. x. p. 67 (1858)[1]; Horn, Trans. Am. Ent. Soc. xiii. p. 105, t. 6. figg. 178–182[2].

*Hab.* NORTH AMERICA, Arizona[2].—MEXICO, Sonora (*Schott*[1]).

I am unacquainted with this species.

### 7. **Chrysobothris astuta.** (Tab. III. fig. 5.)

Tota ænea, nitidiuscula; thorace parallelo, ante apicem utrinque paullo angulato; elytris convexis, sat crebre evidenter punctulatis, singulo guttis rotundatis viridibus (cupreo cinctis) quatuor ornato; corpore subtus ad latera dense flavo-griseo pubescente; abdominis segmento ultimo apice cyaneo, bispinoso.
Long. $5\frac{1}{4}$ lin.

*Hab.* Mexico, Cordova (*Sallé*), Jalapa (*Höge*).

This species greatly resembles *C. megacephala*, Lap. & Gory, from San Domingo; but is relatively longer, and has the thorax less angular at the sides anteriorly, &c. The head is densely punctured and clothed with sandy pubescence, with a smooth straight raised line between the eyes; the top is rather closely and strongly punctured, with an impressed line on the vertex. The thorax is rather closely and very distinctly punctured, and transversely strigose as is so commonly the case in this genus. Each elytron has a round coppery impression at the base, another on the disc rather before the middle, and two others just behind the middle; these impressions are green in the middle and encircled with coppery, and are deeply impressed; there is also a slight impression just above the humeral callus, but it is not coloured, and the sides are rather strongly impressed below the shoulder. Tarsi blue. The apex of the abdomen is bidentate (Tab. III. fig. 5 *a*), or with a slight projection in the middle in addition to the lateral teeth (fig. 5 *b*).

### 8. **Chrysobothris sallæi.** (Tab. III. fig. 6.)

Ænea; elytris purpureo-nigris, guttis læte aureo-viridibus (cupreo tinctis) ornatis.
Long. $4\frac{1}{2}$–5 lin.

*Hab.* Mexico, Cordova (*Sallé*); Guatemala, Chacoj and Cahabon in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*).

This species differs from the preceding in having the elytra dark purple, with the spots rather larger and brighter. There is, moreover, a bright spot on the humeral callus; and on the suture below the scutellum there is a small elongate spot which does not appear in *C. astuta*. The lateral angles of the terminal segment of the abdomen are very acute (Tab. III. fig. 6 *a*).

### 9. **Chrysobothris phœbe.**

*Chrysobothris phœbe*, Thoms. Typi Bupr. p. 77 (1878)[1].

*Hab.* Mexico[1].

Known to me only from description. It appears to be allied to *C. frontalis*, Oliv.

### 10. **Chrysobothris viridi-impressa.**

*Chrysobothris viridi-impressa*, Lap. & Gory, Mon. ii. p. 27, t. 5. f. 39[1].

*Hab.* Guatemala, Yzabal (*Sallé*); Nicaragua, Chontales (*Janson*); Panama (*Boucard*), Taboga Island (*J. J. Walker*).—Colombia[1].

### 11. **Chrysobothris nausicaa.**

*Chrysobothris nausicaa*, Thoms. Typi Bupr., Append., i. p. 45 (1879)[1].

*Hab.* Mexico[1], Orizaba (*Sallé*); Guatemala (*Scherzer*); Panama (*Boucard*).

The specimens which I identify with *C. nausicaa* measure only 8 millim. in length, instead of 9 millim. as given by M. Thomson. This insect appears to me to be scarcely distinct from *C. cayennensis* (Gmel.), a species occurring in Venezuela and on the Amazons.

### 12. **Chrysobothris melazona.**

*Chrysobothris melazona*, Chevr. Col. Mex. Cent. ii. fasc. 5, no. 104 (1835)[1].

*Chrysobothris nigrofasciata*, Lap. & Gory, Mon. ii. p. 21, t. 3. f. 32[2] (nec Lec. Trans. Am. Phil. Soc. 2nd ser. xi. p. 240).

*Hab.* Mexico[1 2], Cordova, Orizaba, Puebla, Vera Cruz (*Sallé*), Jalapa (*Höge*); British Honduras, R. Hondo (*Blancaneaux*); Guatemala, Coban, Lanquin, Rio Naranjo 450 feet (*Champion*).

This species varies from $3\frac{1}{3}$–$5\frac{1}{4}$ lin. in length. One example from Orizaba is golden-coppery; another from Jalapa has the elytra blue.

### 13. **Chrysobothris convexiuscula.** (Tab. III. fig. 7.)

Læte viridis, nitida; elytris fasciis tribus sat latis cyaneo-nigris ornatis, fascia basali ad suturam interrupta; abdominis segmento ultimo fere lævi, cyaneo-nigro.

Long. $4\frac{1}{2}$ lin.

*Hab.* Nicaragua, Chontales (*Belt*).—Colombia (*Brit. Mus.*).

This species differs from *C. melazona* in having the middle bands of the elytra united at and somewhat extended on the suture; the posterior bands are also united at the suture, and the suture itself narrowly edged with blue-black at the apex. The abdomen has a series of blackish spots on each side, and the apical segment is entirely blue-black, and much less punctured than in *C. melazona*; the apical margin of the terminal segment is sinuous, with an acute tooth at each angle (Tab. III. fig. 7 *a*).

### 14. **Chrysobothris juncta.** (Tab. III. fig. 8.)

Elongata, sat convexa, azurea, crebre evidenter punctata; fronte læte aureo-viridi; elytris fasciis tribus sat latis cyaneo-nigris, fascia basali ad suturam interrupta.

Long. $3\frac{1}{4}$ lin.

*Hab.* Mexico, El Cameron (*Sallé*), Jalapa (*Höge*).

Although this species is somewhat intermediate in its appearance between *C. melazona* and *C. cupreipes*, it is really, on account of its convexity and the straight sides to the thorax, allied to *C. analis*, Lec. The head is flattened in front, and has a slight, short frontal ridge, which is divided in the middle. The thorax is very convex, parallel at the sides, rather closely and very distinctly punctured. The elytra have a deep fovea

at the extreme base, and a slight shallow one between the first and second bands; the punctures are not very close together on the disc, but are closer and stronger towards the sides; the first fascia does not reach the margin nor the suture; and the second and third fasciæ nearly touch the margin and suture, and are united by a fine line running close to the latter (in one example the three bands are united by a line). The underside is slaty blue-black; the apical segment is arcuately and broadly emarginate, with the angles spiniform (Tab. III. fig. 8 *a*).

The example from Jalapa has the basal fascia reduced to a transverse spot.

### 15. **Chrysobothris trisignata.** (Tab. III. fig. 9.)

Elongata, convexa, crebre punctata, aureo-viridis, splendens; thorace parallelo; singulo elytro macula ante medium, fascia pone medium alteraque ante apicem, cyaneo-nigris; fronte corporeque subtus aureo-cupreis.

Long. 5 lin.

*Hab.* Mexico, Sierra de Mazamithl in Guanajuato (*Sallé*), Almolonga, Chilpancingo in Guerrero (*Höge*).

This insect somewhat resembles *C. melazona*, but has the thorax parallel at the sides, a character at once separating it from that species; the punctuation is, moreover, closer, and stronger and more crowded at the sides of the elytra. The forehead has a short, slightly prominent ridge on the vertex. The lateral margins of the thorax are coppery. The elytra are without costæ, but there is a slight longitudinal impression at the suture posteriorly; there is a deep fovea at the base, and there is a very shallow one on the disc; the punctures near the suture are fine and separated, but towards the sides and apex they become stronger and closer, so that at the margins the surface is rather rugose. The apical segment of the abdomen of the male is broadly but very slightly sinuate, with the angles very acute (Tab. III. fig. 9 *a*); in the female it is bi-sinuate (fig. 9 *b*).

### 16. **Chrysobothris socialis.** (Tab. III. fig. 10.)

Aureo-viridis, minus nitida, confertissime punctata; singulo elytro macula ante medium, fascia pone medium (medio interrupta) alteraque subapicali, cyaneo-nigris; fronte corporeque subtus æneo-cupreis, confertim punctatis.

Long. 6 lin.

*Hab.* Mexico, Ventanas in Durango 2000 feet (*Forrer*).

This species is very close to the preceding, but is distinguished by its surface being somewhat dull, owing to the stronger and more dense punctuation. The punctures on the disc of the thorax frequently touch each other, whilst in *C. trisignata* they are somewhat separated. The forehead has scarcely any trace of the usual ridge. The middle band of the elytra is interrupted in the centre, but this may be an individual peculiarity, as there is only one specimen before me. The lateral angles of the terminal segment of the abdomen are scarcely prominent (Tab. III. fig. 10 *a*).

### 17. **Chrysobothris analis.**

*Chrysobothris analis,* Lec. Trans. Amer. Phil. Soc. xi. p. 238 (1860)[1]; Horn, Trans. Amer. Ent. Soc. xiii. p. 111 (1886)[2].

*Chrysobothris austinii,* Thoms. Typi Bupr. p. 78 (1878)[3].

*Hab.* North America, Texas near the Rio Grande[1 2].—Mexico[3], Matamoros[1 2], Orizaba (*Sallé*), Yucatan; Guatemala (*Brit. Mus.*).

Three examples before me appear to be referable to this species. M. Thomson gives "intento æneo-viridi-metallica" as the colour: two of the specimens are brownish-æneous; the third, from Yucatan, has the elytra blue, and is also rather shorter in form than the others.

### 18. **Chrysobothris trochilus.** (Tab. III. fig. 11.)

Nigro-purpurea, parum nitida; capitis vertice, thoracis margine antico, macula marginali alteraque basi, læte viridibus; elytris subtiliter punctulatis, fovea basali impressa, macula humerali, fascia mediana (interne dilatata) suturam haud attingente vittaque apicali prope marginem læte, aureo-viridibus, fortius punctatis. Long. $3\frac{1}{2}$ lin.

*Hab.* Panama, Bugaba (*Champion*).—South America, Pará (*Brit. Mus.*).

The head is closely punctured; the front of the face slightly impressed and tinted with green. The thorax is broad, not very closely punctured, the punctures partially connected by transverse striation, the punctures on the margin close and strong. The scutellum is small, triangular, golden-green. The elytra have only one round fovea at the base; the punctuation is rather fine, the punctures well separated from each other, and those on the green spots somewhat asperate. The posterior surface of the femora, the middle of the sterna, and the margins of the metathoracic episterna and of the abdomen are golden-green. The prosternum is closely and coarsely punctured. The abdomen is bluish-green, with slight violet reflections; the apical segment in the male is deeply emarginate, the emargination as deep as wide, and rounded (Tab. III. fig. 11 *a*).

### 19. **Chrysobothris guatemalensis.** (Tab. III. fig. 12.)

*Chrysobothris guatemalensis,* Thoms. Typi Bupr. p. 80 (1878)[1].

*Hab.* Mexico, Yucatan (*coll. Laferté, in Brit. Mus.*), Totosinapan, Orizaba (*Sallé*), Vera Cruz, Jalapa, Almolonga (*Höge*); Guatemala[1] (*Sallé*), San Gerónimo (*Champion*).

In a considerable series of this species I have only seen two males, one from Mexico and the other from Guatemala. They differ from the females in having the front of the head, the greater part of the antennæ, the prosternum, part of the mesosternum and coxæ, the anterior surface of the front and intermediate femora and tibiæ, the anterior surface of the posterior tibiæ, and the tarsi, golden-green. The apical segment of the abdomen is semicircularly emarginate in the male (Tab. III. fig. 12 *a*), slightly tridentate in the female (fig. 12 *b*).

## 20. Chrysobothris foveata.

Lata, depressa, nitida, ænea; thorace transverso, postice angustato, medio profunde sat late impresso, utrinque foveis tribus impressis; elytris subtiliter punctulatis, marginibus crebre sat rugoso-punctatis, singulo basi bifoveato, ante medium fovea rotundata sat magna, altera post medium prope marginem impressis, postice prope suturam costa sat elevata; corpore subtus viridi-æneo, hic et illic cupreo tincto, segmento ultimo apice bisinuato; tarsis cyaneis.

Long. 7 lin.

*Hab.* Mexico, Zacatecas (*Brit. Mus.*).

This species somewhat resembles *C. guatemalensis*, but is relatively broader and more shining. In *C. guatemalensis* there is on the forehead a finely punctured transverse spot bounded below by a smooth elevated line; in *C. foveata* this spot is less distinct, and is bounded above by a smooth line. In *C. foveata* there is a very short elevated line on the vertex that is not present in *C. guatemalensis*; in this respect it approaches *C. femorata*. The punctuation on the vertex is closer than in *C. guatemalensis*, but not so close as in *C. femorata*. The thorax is not very closely punctured on the disc, but closely and coarsely so on the sides; the median impression is deep, broadest behind, and on each side of it are two deep foveæ, with a third less distinct one near the anterior angle. The surface of the elytra is very uneven; the basal foveæ are well marked, the inner one coppery; the impression on the disc is rather large and round, punctured but not rugose, partly coppery; the posterior impression is smaller and more lateral; the costa near the suture behind the middle is sharply defined, slightly sinuous; the space between the costa and the suture nearly smooth; outside the costa the surface is longitudinally impressed, and the margins below the shoulder are also impressed; and parallel with the apical margin is a ridge, which separates the comparatively smooth dorsal surface from the lateral rugose margin.

## 21. Chrysobothris exesa.

*Chrysobothris exesa,* Lec. Proc. Acad. Phil. x. p. 68 (1858)[1]; Horn, Trans. Am. Ent. Soc. xiii. p. 95, t. 4. figg. 125–129[2].

*Hab.* North America, Colorado River [1], Arizona [2].—Mexico, Sonora (*Schott* [1]), Northern Sonora (*Morrison*).

## 22. Chrysobothris chactas.

*Chrysobothris chactas,* Lap. & Gory, Mon. ii. p. 47, t. 8. f. 63[1].
*Chrysobothris inea,* Thoms. Typi Bupr. p. 80 (1878)[2].
*Chrysobothris inca,* Thoms. Typi Bupr., Append., i. p. 48 (1879)[3].

*Hab.* Mexico [1 2 3], Mirador, Puebla (*Sallé*), Jalapa (*Höge*).

This species is somewhat variable, both in size and form, and some specimens are difficult to separate from the North-American *C. femorata*, Oliv.; it is, however, generally rather shorter and broader than that insect. No doubt the specimens of

*C. femorata* stated by Dr. Horn (Trans. Am. Ent. Soc. xiii. p. 78) to come from Mexico are referable to this species.

It would appear that *C. inca* [3] is only *C. inea* [2] accidentally redescribed; the descriptions are nearly identical.

In the absence of all evidence to the contrary I am compelled to regard *C. inea* as synonymous with *C. chactas*, Lap. & Gory.

### 23. **Chrysobothris inæqualis.** (Tab. III. fig. 13.)

Oblongo-ovata, depressa, opaca, cupreo-ænea, subtus cuprea; thorace late transverso, brevi, creberrime punctato, lineis duabus discoidalibus parum elevatis nitidis, parce punctatis; elytris confertim rugoso-punctatis, lineis elevatis nitidis nigricantibus ornatis; prosterno medio lævi.

♂ fronte dense pilosa; prosterno æneo; abdominis segmento ultimo late emarginato.

♀ fronte vix pilosa; abdominis segmento ultimo anguste emarginato, utrinque dentato.

Long. 5–6 lin.

*Hab.* MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Suapam (*Sallé*).

This species is certainly allied to *C. femorata*, but is shorter, broader, and more depressed, and has the thorax much more transverse; and the smooth prosternum at once separates it. The head has on the vertex a smooth ridge; the smooth frontal ridge is divided into two in the female, in the male it is completely hidden by the peculiarly dense fine sandy-grey pile. The thorax is impressed on each side and densely and roughly punctured, and has a small irregular raised spot at the base on each side of the smooth discoidal lines; the basal lobe is slightly truncate. The elytra have the ridge next to the suture broad, flat, and smooth at the base, but becoming narrow and costiform posteriorly; the second costa is rather irregular, almost completely interrupted by a large obliquely quadrate impression before the middle; the third costa only appears as an outer boundary of this impression; between the first and second costæ behind the middle there are two quadrangular shining patches, which have some strong punctures scattered over them; there are also two or three smooth transverse lines dividing the surface into irregular quadrate spaces. The apical segment of the abdomen in the male is emarginate, but not so deeply as in *C. guatemalensis*; in the female it is slightly notched (Tab. III. fig. 13 *a*).

### 24. **Chrysobothris acutipennis.** (Tab. III. fig. 14.)

*Chrysobothris acutipennis*, Chevr. Col. Mex. Cent. ii. fasc. 8, no. 190 (1835)[1]; Horn, Trans. Am. Ent. Soc. xiii. p. 107, t. 6. figg. 188–192 [2].

*Chrysobothris cupreo-ænea*, Lap. & Gory, Mon. ii. p. 39, t. 7. f. 55 [3].

*Chrysobothris acuminata*, Lec. Trans. Am. Phil. Soc. 2nd ser. xi. p. 237 (1860) [4].

*Chrysobothris cupreo-signata*, Thoms. Typi Bupr. p. 80 (1878) [5].

*Hab.* NORTH AMERICA, Texas [2], Arizona [2].—MEXICO [2 5], Tuspan [1], Tamaulipas to Matamoros [4], Izucar, Orizaba (*Sallé*), Cerro de Plumas (*Höge*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Chacoj in Vera Paz, Torola 1000 feet, Pantaleon 1700 feet, Volcan

de Atitlan 2500 to 3500 feet (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, San Feliz, Tolé (*Champion*).—VENEZUELA (*Brit. Mus.*); GUIANA, Cayenne [2].

It is somewhat remarkable that none of the authors who have described this insect mention the very long and acuminate scutellum, a character almost separating it generically from *Chrysobothris*. The only species known to me that at all approaches it in this respect is *C. antiqua*, Chevr. The abdominal segments are generally bordered with dark purple-blue, which also is not mentioned by any of the authors. The apical segment of the abdomen of the male is sinuate, with a deep emargination in the middle (Tab. III. fig. 14 *a*); in the female it is bidentate, with a carina in the middle (fig. 14 *b*).

### 25. **Chrysobothris insidiosa.** (Tab. III. fig. 15.)

Elongata, ænea, nitida, abdomine hic et illic purpureo tincto; thorace basi paullo angustato, utrinque foveolis tribus impresso, sat crebre (discum subtiliter, lateras fortiter) punctato; elytris tenue punctatis, singulis quadri-foveolatis (2 basalibus, secunda ante medium inaurata, tertia pone medium), costa juxta suturam postice bene elevata, ad apicem in spinam acutam producta, ceteris interrupta.

Long. 7 lin.

*Hab.* PANAMA, Bugaba, Tolé (*Champion*).

This species is very near *C. acutipennis*, and resembles it in general shape, colour, and in the form of the scutellum. The head is densely punctured. The thorax is very delicately punctured on the disc, but deeply so at the sides, and the punctures are distinctly separated from each other, except behind the posterior foveæ, where they are transversely confluent; there are two shallow oblique impressions near the anterior angles, and a deep round fovea near the base. The elytra are rather delicately (but distinctly) punctured, except at the extreme margin, where the punctuation is stronger and very close; the punctures on the surface are distinctly separated from each other; there is a deep fovea at the base, a small fovea on the shoulder, a large round one on the disc before the middle, and another behind the middle. The apical segment of the abdomen is broadly truncate at the apex, the angles acute, with a sharp costa in the middle for its entire length (Tab. III. fig. 15 *a*).

### 26. **Chrysobothris quadriplagiata.** (Tab. III. fig. 16.)

Sat lata, depressa, cupreo-ænea, subtus cuprea, creberrime punctata; thorace antice latiore, disco minus crebre punctato, lateribus rugoso-punctatis, gutta parva elevata lævi prope angulos anticos; elytris confertim rugoso-punctatis, singulis fovea basi sat profunde impressa, plaga magna impressa sicut divisa, altera obliqua pone medium, ambabus margine lævi nigro cinctis, ornatis; prosterno lævi; abdominis segmento ultimo linea longitudinali parum elevata, apicem perparum sinuato, angulis acutis, prominulis.

Long. 7 lin.

*Hab.* MEXICO, Guanajuato (*Sallé*).

This is a link between the species allied to *C. femorata* and those allied to *C. ærea*. The head is densely punctured, and has some small irregular smooth marks on the face; the vertex has a well-marked smooth, divided ridge. The thorax has an indistinct

smooth line in the middle; at the base there is on each side a small smooth spot. Besides the deep impression at the base of the elytra, there is a much less marked one on the humeral callus; near the suture there is a fine costa, but it does not extend to the base, and diverges slightly from the suture near the apex, and then at the apex turns sharply towards the sutural angle; there are two indistinct longitudinal smooth lines between the discoidal impressions, and the subapical impression has two short lines emitted from its posterior margin. The apical segment of the abdomen is bidentate, coarsely punctured, with a smooth median line (Tab. III. fig. 16 *a*).

### 27. **Chrysobothris ærea.**

*Chrysobothris ærea*, Chevr. Col. Mex. Cent. i. fasc. 3, no. 33 (1834)[1]; Lap. & Gory, Mon. ii. p. 42, t. 8. f. 59[2] (nec Horn, Trans. Am. Ent. Soc. xiii. p. 104, t. 6. figg. 173–177).

*Hab.* Mexico [1] [2].

The type of this species is now in the British Museum, and is unfortunately still unique. The following and other species have been confounded together and mistaken for it. The species referred to under this name by Dr. Horn (*l. c.*) must, I think, be the one described below as *C. costifrons*.

### 28. **Chrysobothris simplex.** (Tab. III. fig. 17.)

Æneo-cuprea, subtus cuprea, sat depressa, creberrime fortiter punctata; capite rugoso, vertice linea elevata nitida; thorace antice latiore, disco minus crebre punctato, lateribus rugoso-punctatis; elytris confertim sat fortiter punctatis, basi fovea parva cuprea impressa, disco ante medium macula transversa cuprea, altera multo majore obliqua post medium, ornato; sterno lævi.

♂ abdominis segmento ultimo profunde semicirculari emarginato; ♀ sinuato.

Long. $7\frac{1}{2}$ lin.

*Hab.* Mexico, Las Vigas (*Höge*).

This species is very near *C. ærea*, but has the thorax and elytra shorter, the latter less gradually narrowed towards the apex, and widest rather behind the middle. The fovea at the base of the elytra is smaller and more punctiform, and not extended on to the humeral callus, although there is a very slight impression on the callus; the impression on the disc is much smaller, not more than one third the width of the elytron, coppery on the sutural end, shallow on the outer side; the posterior impression is large; the sutural costa is well marked, but does not extend to the base; two other costæ may be traced behind the posterior impression. The apical segment of the abdomen is not tridentate as in *C. ærea*, but emarginate in the male (Tab. III. fig. 17 *a*), and notched in the female (fig. 17 *b*).

### 29. **Chrysobothris stellifera.** (Tab. III. fig. 18.)

Elongata, elliptica, parum convexa, crebre rugulosa et punctata; capite vertice linea elevata lævi; thorace transverso (lateribus medio fere parallelis), antice posticeque paullo angustato, disco subtiliter punctato, punctis nonnullis majoribus intersparsis, lateribus rugosis; elytris postice gradatim angustatis, ad apicem paullo serratis, singulo basi puncto aurato bene impressa, ante medium fovea rotundata aurata, post

medium gutta parva inconspicua prope marginem, costa suturali (basi obliterata) minus regulari ; prosterno subtilissime punctulato, fere lævi.

♂ abdominis segmento ultimo apice profunde emarginato ; ♀ sinuato, angulis prominulis, dentiformibus.

Long. 8–9 lin.

*Hab.* Mexico, Oaxaca (*Sallé*).

Allied to *C. ærea*, but with more parallel thorax. The surface of the elytra is rugulose, with punctuation intermixed ; the small basal brassy fovea and the foveæ on the disc stand out very distinctly from the dark surrounding surface. The apex of the abdomen in the female (Tab. III. fig. 18 *a*) is very similar to that of the male, but less deeply emarginate.

### 30. **Chrysobothris costifrons.** (Tab. III. fig. 19.)

*Chrysobothris costifrons,* Chevr. in litt.

*Chrysobothris ærea,* Horn, Trans. Am. Ent. Soc. xiii. p. 104, t. 6. figg. 173–177 [1] (nec Chevr.).

Præcedenti affinis, differt tamen elytrorum macula basali majore, macula discoidali minus splendente, majore, plagaque post medium obliqua distincta.

Long. 8–10 lin.

*Hab.* North America, Arizona (*Morrison* [1]).—Mexico, Northern Sonora (*Morrison*), Orizaba (*Sallé*), Oaxaca [1].

This insect might perhaps by some persons be regarded as a local form of *C. stellifera* ; it appears to me, however, to merit the rank of a species. The basal fovea of the elytra is larger, and there is a more distinct impression on the shoulder. The surface of the elytra is moreover differently sculptured : in *C. stellifera* there are very numerous small raised black rugæ with fine punctuation between ; in *C. costifrons* the finely punctured surface prevails, the irregular raised rugæ being much fewer in number and more confined to the sides. The spot before the middle of the elytra is much larger and more quadrangular ; the surface immediately behind it is finely punctured, and followed by an elongate very shallow oblique impression extending nearly from the margin to the sutural costa ; behind this impression there is a very irregular slightly raised black border, emitting posteriorly two short ridges towards the margin. The apex of the abdomen in the male (Tab. III. fig. 19 *a*) is more emarginate than in the female (fig. 19 *b*).

### 31. **Chrysobothris distincta.**

*Chrysobothris distincta,* Lap. & Gory, Mon. iv. p. 176, t. 30. f. 171 [1].

*Hab.* Mexico [1], Puebla and Matamoros Izucar (*Sallé*, *Höge*), Yautepec, Cuernavaca, Mexico city, Almolonga, Oaxaca, Cerro de Plumas (*Höge*) ; Guatemala, Rio Paz (*Sallé*).

A male specimen from Guatemala has the head and antennæ bright green ; but this coloration appears to be a mere individual variation. It is not a sexual character as is sometimes the case, both sexes being before me.

### 32. **Chrysobothris octocola.**

*Chrysobothris octocola,* Lec. Proc. Acad. Phil. x. p. 67 (1858)[1]; Horn, Trans. Am. Ent. Soc. xiii. p. 73, t. 2. figg. 6–10[2].

*Hab.* North America, Colorado River [1], Texas [1].—Mexico, Sonora (*Schott* [1]), Alamos (*Buchan-Hepburn*), San Luis Potosi (*Dr. Palmer*), Tamaulipas [2].

If I have correctly determined this species, it chiefly differs from *C. multistigmosa* in being generally smaller, less parallel, and with shorter thorax. The apex of the abdomen appears to be slightly notched in the middle, and differs only slightly from the female of *C. multistigmosa*; the male is, however, easily distinguished by the apical segment being more impressed and punctured in the middle, with the apical emargination rather deeper and narrower, its edge appearing blunt and not sharply defined. Our two examples have the elytra obscure purple.

### 33. **Chrysobothris modesta.**

Præcedenti affinis et simillima; differt tamen clypeo acute inciso; fusco-ænea, confertim punctata, elytris maculis cuprascentibus ornatis.

Long. $5\frac{1}{2}$–$6\frac{1}{2}$ lin.

*Hab.* Mexico, Huetamo and Tacambaro in Michoacan (*Höge*).

As one of the characters by which *C. octocola* may be separated from *C. multistigmosa*, Dr. Horn (*l. c.*) mentions that the emargination of the clypeus is "rounded at the bottom." This applies to the male example (with green head) from Alamos, and to the female from San Luis Potosi recorded above. Six specimens from Michoacan, which I at first believed to be *C. octocola*, have the clypeus triangularly incised as in *C. multistigmosa*. They cannot, however, be regarded as *C. multistigmosa* as they have the short thorax, less acuminate elytra, and sexual characters of *C. octocola*; I am compelled, therefore, to separate them as a distinct species. The males do not present any difference in the coloration of the head.

### 34. **Chrysobothris multistigmosa.**

*Colobogaster* (*Chrysobothris*) *multistigmosa,* Mann. Bull. Mosc. viii. p. 82 (1837)[1].

*Chrysobothris atabalipa,* Lap. & Gory, Mon. ii. p. 43, t. 8. f. 60 (1841)[2]; Horn, Trans. Am. Ent. Soc. xiii. p. 72, t. 2. figg. 1–5[3].

*Chrysobothris basalis,* Lec. Proc. Acad. Phil. x. p. 68 (1858)[4].

*Hab.* North America, Laredo to Ringgold Barracks [4], Texas [3].—Mexico [2 3], Ventanas 2000 feet (*Forrer*), Puebla, Vera Cruz, Matamoros Izucar (*Sallé*, *Höge*), Yolos, Cordova (*Sallé*), Oaxaca [1], Jalapa, Atlisco, Chilpancingo, Almolonga (*Höge*), Tehuantepec (*Sumichrast*); Guatemala, Torola 1000 feet (*Champion*); Salvador, Santa Cruz (*Sallé*).

I see no reason for doubting that this is the species described under the name

*C. multistigmosa*. It is common at Oaxaca; and the elytra being described as parallel, or nearly so, at once points to this insect.

The male appears to be dimorphic: numerous examples from various parts of Mexico and one from Salvador have the antennæ broad, compressed, and coppery, with the third joint at its apex as broad as its length; other specimens from the same localities have the antennæ comparatively narrow, with the third joint elongate, scarcely widened at its apex.

I have not seen an example of the form with broad antennæ from the United States; and as Dr. Horn (*l. c.*) does not mention it, I presume it does not occur there.

### 35. **Chrysobothris lateralis.** (Tab. III. fig. 20.)

Elongata, parallela, obscure æneo-cuprea; capite crebre punctato, parce pallide piloso, guttis duabus parvis nitidis parum elevatis notato; thorace transverso, quam elytra paullo angustiore, basi parum angustato, lateribus rufo-cupreis; singulo elytro basi foveola parva, secunda ad medium, duabus post medium vix impressis læte, rufo-cupreis.

Long. 3 lin.

*Hab.* Mexico, Northern Sonora (*Morrison*).

The head is somewhat flattened in front, and closely punctured; with two small smooth spots below the middle, and another on the upper part of the face, from which proceed two short oblique, often inconspicuous, lines. The thorax is moderately finely punctured, the punctures separated from each other, on the sides as well as on the disc. The elytra have a slightly asperate punctuation on the base and margins, but fine on the disc, the punctures on the disc distinctly separated from each other; the first costa is only distinct in the apical third, and curved away from the suture before the apex; and there is a very short costa below the posterior red spots, and a short sublateral one. Prosternum densely punctured, clothed with greyish-white pile, which is more dense in the male than in the female. Abdomen with whitish pubescence at the sides, finely punctured in the middle, the apical margins of the segments smooth and steel-blue; the apical segment in the male slightly emarginate (Tab. III. fig. 20 *a*), in the female slightly notched (fig. 20 *b*).

### 36. **Chrysobothris debilis.**

*Chrysobothris debilis*, Lec. Trans. Am. Phil. Soc. 2nd ser. xi. p. 236[1]; Horn, Trans. Am. Ent. Soc. xiii. p. 75, t. 2. figg. 15–19[2].

*Hab.* North America, Ohio [1 2], Western States [1], Texas [2], Arizona [2], Southern California [2].—Mexico, Northern Sonora (*Morrison*).

The specimens received from the late Mr. Morrison with this name differ from *C. lateralis* in having the thorax a little broader, more rounded at the sides, more pubescent, and more coarsely and (consequently) closely punctured. The elytra are more uniformly and more strongly punctured, and there is only one impression behind

the middle. The general colour is more æneous, and the spots on the elytra are nearly concolorous.

## AMORPHOSOMA.

*Amorphosoma,* Laporte, Silb. Rev. Ent. iii. p. 166 (1835).

This genus as at present constituted comprises some half-dozen species divided equally between tropical America and India and the Malay Archipelago. The American species, however, differ from their Old-World allies in having a costa on the disc of the elytra.

### 1. **Amorphosoma penicillatum.** (Tab. IV. fig. 1.)

*Buprestis pennicillata,* Klug, Ent. Bras. Cent. p. 11, t. 40. f. 12; Nov. Act. Leop.-Carol. Nat. Cur. xii. p. 429 (1825)[1].

*Amorphosoma pennicillatum,* Lap. & Gory, Mon. ii. p. 2, t. 1. f. 1[2].

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).—SOUTH AMERICA, Brazil [1 2].

## STENOGASTER.

*Stenogaster,* Solier, Ann. Soc. Ent. Fr. ii. p. 335 (1833).

The type of this Tropical-American genus is *S. linearis* (Linn.) from Cayenne. *Stenogaster* is remarkable from the fact that only the fourth joint of the tarsi is furnished with a lamina.

### 1. **Stenogaster costifer.** (Tab. IV. fig. 2.)

Elongatus, depressus, supra niger, vix ænescens, subtus æneus; thorace fossulato, griseo-piloso; elytris griseo-pilosis, fascia post medium, altera ante apicem nigris, costa ad basin fuscata.

Long. $5\frac{1}{2}$–7 lin.

*Hab.* MEXICO, Izucar (*Sallé*); GUATEMALA, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Belt*).

This species resembles *S. linearis* in general form, but is nearly black above. It is at once distinguished from its allies by the costa of the elytra dividing into two branches near the base, one branch going to the shoulder, the other towards the scutellum. The punctures on the elytra are rather large, and have a tendency to form lines. The fine greyish pubescence gives a mottled appearance, as in some other species of the genus; but there is a well-marked, rather broad, black band a little behind the middle, and another (less distinct) one near the apex. The prosternum is deeply longitudinally impressed, the impression closely punctured. Each elytron has a small tooth at the apex.

### 2. **Stenogaster fossulatus.**

*Stenogaster fossulatus,* Chevr. Col. Mex. Cent. ii. fasc. 8, no. 192 (1835)[1].

*Hab.* MEXICO, Tuspan [1].

This and the following species are unknown to me.

## CYPHOTHORAX.

*Cyphothorax*, C. O. Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 180.

I have proposed this genus for *Stenogaster palleolatus*, Chevr. It differs from *Stenogaster* in having the second and third (as well as the fourth) joints of the tarsi furnished with a slight pad; the elytra have no costæ.

### 1. **Cyphothorax palleolatus.** (Tab. IV. fig. 4.)

*Stenogaster palleolatus*, Chevr. Col. Mex. Cent. ii. no. 134[1].
*Stenogaster gibber*, Gory, Mon. iv. p. 205, t. 34. f. 196[2].

*Hab.* Mexico, Orizaba[1].—Brazil[2].

## AUTARCONTES.

*Autarcontes*, C. O. Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 180.

I include in this genus *Agrilus mucoreus*, Klug, and some allied species. These have the thorax broad and transverse, with an angular projection at the sides just before the base; and the elytra somewhat parallel for two thirds of their length and then obliquely narrowed to the apex, the apex of each being slightly sinuate. Each elytron has a single obtuse costa extending beyond the middle, the dorsal space between them being more or less flat.

The basal joint of the posterior tarsi in *A. mucoreus* is short, but in *A. abdominalis*, which I cannot dissociate from it, the basal joint is nearly as long as in *Agrilus*.

### 1. **Autarcontes abdominalis.** (Tab. IV. fig. 6.)

Niger; elytris inter costas ænescentibus immaculatis, fascia angusta ante apicem (e pube grisea) ornatis; corpore subtus cyaneo, maculis coccineis utrinque ornato.
Long. 8 lin.

*Hab.* Nicaragua, Chontales (*Belt*).

The thorax in this species has the angular projection at the sides very acute; there are three impressions on the disc, the anterior one being small. The spot of red pubescence on the basal segment of the abdomen is large and transverse; those on the following three segments are a little smaller, each with an ovate smooth space in the pubescent spot.

## OMOCHYSEUS.

*Omochyseus*, C. O. Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 182.

This genus is closely allied to *Agrilus*; I have included in it two species, one from Brazil and one from Mexico.

### 1. **Omochyseus terminalis.** (Tab. IV. fig. 5.)

*Omochyseus terminalis*, C. O. Waterh. Trans. Ent. Soc. Lond. 1887, p. 183[1].

Niger, vix purpurascens; pectore abdomineque cyaneis, pedibus cupreis; capite profunde excavato; thorace transverso, crebre sat fortiter punctato, disco excavato, antice guttis duabus elevatis punctatis instructo; elytris sicut griseo-marmoratis, hic et illic æneo-tinctis, confertim punctulatis, guttis numerosis irregularibus parum elevatis nitidis, fascia post medium nigro-velutina, apice inclinato, cyanescente, transverso, trapezoidali.

Long. 6 lin.

*Hab.* Mexico, Oaxaca[1] (*Sallé*).

This insect chiefly differs from the Brazilian *O. humeralis* in having the apex of the elytra rather more expanded.

## ENGYAULUS.

General characters of *Agrilus*. Sockets of the antennæ round, and separated from each other by a very narrow space (Tab. IV. fig. 9 *b*). Front of the head (when viewed from the side) very prominent and regularly arched (fig. 9 *a*). Basal joint of the posterior tarsi short.

I propose this generic name to include *Agrilus pulchellus*, Bland, and a closely allied new species.

### 1. **Engyaulus pulchellus.** (Tab. IV. figg. 9, 9 *a*, *b*.)

*Agrilus pulchellus*, Bland, Proc. Ent. Soc. Phil. iv. p. 382 (1865)[1].

*Hab.* North America, Colorado (*J. Ridings*[1]). — Mexico, Northern Sonora (*Morrison*).

### 2. **Engyaulus rubrovittatus.**

Elongatus, parallelus, rugosus, æneus, subtus pube brevi griseo-alba dense vestitus; capite longitudinaliter fortiter impresso; thorace parallelo, convexo, medio leviter canaliculato, angulis posticis prominulis; elytrorum sutura apiceque viridibus, lateribus cupreo-rubris.

Long. 9–11 lin.

*Hab.* Mexico, Guanajuato (*Sallé*).

*Var.* elytrorum sutura apiceque violaceis.

*Hab.* Mexico, Oaxaca (*Brit. Mus.*).

This species resembles *E. pulchellus* in general appearance, but differs in many points. The head and thorax are rugulose and punctured; the rugæ on the raised parts of the forehead are longitudinal but wavy. The rugæ on the thorax are transverse, and more regular than in *E. pulchellus*. The thorax is more evenly convex, with scarcely any trace of lateral impression; the sides are nearly rectilinear; the discoidal impression is not deep, but distinct, and is less interrupted in the middle. The elytra are closely and rather coarsely granular; the green (or violet) colour of the

suture extends also over the apex. The underside of the body is closely punctured, and almost entirely clothed with whitish pubescence; the pubescence, however, is less dense in the middle of the abdomen. The episterna and sides of the abdomen are densely and very finely punctured. The abdominal segments have their posterior margin smooth. In *E. pulchellus* the middle of the abdomen is bare, and there is a triangular bare spot at the sides of the basal segments.

## PARADOMORPHUS.

*Paradomorphus*, C. O. Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 183.

I include in this genus certain species hitherto placed in *Agrilus*, but which differ in having the basal joint of the posterior tarsi comparatively short.

This character is scarcely of generic importance, as intermediate forms exist; the separation from *Agrilus*, however, of the species with a short basal joint to the hind tarsi will, I hope, facilitate their determination.

### 1. **Paradomorphus obscureguttatus.** (Tab. IV. fig. 7.)

Olivaceo-æneus, parum nitidus; capite antice rufo-cupreo; thorace viridi-æneo, convexo, undatim ruguloso, medio leviter canaliculato; elytris asperatis, maculis quatuor obscuris sordide flavis ornatis, regione suturali ænescente.

Long. $3\frac{1}{2}$–$3\frac{2}{3}$ lin.

*Hab.* Panama, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 3000 feet, David (*Champion*).

The head is finely and closely punctured; the upper part of the forehead is slightly impressed, and has a fine impressed median line which runs down nearly to the middle of the face. The thorax is very convex; the lateral impressions are not very well marked when viewed from above; the median channel is shallow and not conspicuous, slightly interrupted at the middle, and not extended to the front margin; the posterior ridge is very short, somewhat oblique. The elytra have the subcosta only slightly marked; each elytron has an inconspicuous dirty yellow spot before the middle, and another considerably behind the middle. The prosternal process is densely and finely rugose, and sparsely pubescent. The abdomen is finely and closely punctured; but at the base the punctuation is stronger, especially at the sides. The lateral carina of the basal segment has scarcely any trace of sinuosity in the middle.

### 2. **Paradomorphus vermiculatus.** (Tab. IV. fig. 8.)

Brunneo-æneus, parum nitidus, elytris obscure purpurascentibus vel æneis; capite rugoso, vertice ruguloso; thorace antice bene convexo, creberrime sat fortiter vermiculoso-ruguloso; elytris creberrime asperatis, apice serrulato.

Long. 4 lin.

*Hab.* Mexico, Jalapa (*Höge*).

The whole of the insect is sparingly clothed with very short pale grey pubescence,

which, as is commonly the case, is a little more conspicuous at the sides of the thorax, and is thinner at the sides of the elytra. The head has a longitudinal impressed line in front; all the upper part is covered with tortuous rugæ. The thorax is covered with closely placed rugæ, which are much curved at the front part; at the posterior angles there is an indistinct ridge, nearly straight, but very slightly directed inwards. The elytra are somewhat coarsely asperate; the suture behind the middle is a little raised, and at this part the surface on each side of it is shining and nearly smooth. The prosternum is densely and finely punctured. The abdomen is moderately closely and finely punctured. The lateral carina of the basal segment is distinctly angulated rather behind the middle.

### 3. **Paradomorphus ruginosus.**

Convexus, crassus, sat nitidus, supra cupreus, subtus brunneo-æneus; capite rugoso, antice medio leviter impresso; antennis brevibus, nigris; thorace rotundato-convexo, fortiter ruginoso, lateribus medio foveola impressis; elytris subdepressis, basi asperatis, postice punctatis, maculis quatuor pallide flavis ornatis, ad apicem parum attenuatis, vix serrulatis.

Long. $3\frac{1}{3}$ lin.

*Hab.* Mexico, Ventanas in Durango (*Höge*).

This is a well-marked species, owing to its very convex thorax, which is covered with irregular much-raised rugæ, the intervals shining and very delicately punctured. The elytra are impressed at the suture—the impression twice interrupted by obtuse, transverse, slightly-raised ridges—between the two conspicuous spots, one of which is placed at the middle, the other at one quarter from the apex. The prosternal chin-piece* is gently emarginate. The prosternum is strongly and rather closely punctured; the intercoxal process is rather flat, parallel, truncate posteriorly. The metasternum is coarsely punctured, with an elongate central puncture. The abdomen is rather strongly and somewhat closely punctured, with a conspicuous yellowish-white spot at the side of the second segment. The lateral carina of the basal segment has a small, nearly semicircular emargination in the middle, filled above with yellow pubescence. The whole of the underside is sparsely clothed with short pale pubescence.

### 4. **Paradomorphus collaris.**

Convexus, crassus, sat nitidus, purpurascenti-cupreus; capite rugoso, medio longitudinaliter impresso; thorace rotundato-convexo, fortiter ruginoso, pube aureo-flava dense vestito (margine antico calvo), basi transversim impressa; elytris fortiter crebre rugulosis, maculis aureo-flavis ornatis, ad apicem arcuatim attenuatis.

Long. $3\frac{2}{3}$ lin.

*Hab.* Mexico (*Sallé*).

The head has a little yellow pubescence just above the clypeus. The elytra have no subcosta, but they are impressed near the apex; each has a small yellow spot at the suture not far from the base, a transverse spot at the middle, and a somewhat broad

* See p. 58.

oblique spot extending from the suture to the margin. The prosternal chin-piece is gently and widely emarginate. The prosternum is closely and finely rugose, slightly pubescent in the middle; the intercoxal process is very slightly convex, truncate at the apex. The metasternum is closely punctured, with an elongate central puncture behind. The abdomen is rather finely punctured at the apex, rugose at the base; all the middle part of the basal segment clothed with yellowish velvety pile. The sides of the second segment are clothed with yellow pile, as are also the posterior angle of the metasternum and the whole of the posterior coxæ. The lateral carina of the basal segment of the abdomen is deeply angularly excised about the middle, with a yellow spot above.

### 5. **Paradomorphus emarginatus.**

Elongatus, angustus, nitidus; capite cyaneo-viride, longitudinaliter sulcato; thorace cyaneo, obsolete transversim striolato, tenue haud crebre punctato; elytris purpureis, crebre subasperato-punctatis, postice attenuatis, apice profunde emarginato, vitta suturali maculaque ante medium pallide flavis.

Long. 3 lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

The head is moderately closely and finely punctured; the longitudinal channel is rather deep at the top of the face, shallow in front; the face is rather flat, with a very slight ovate swelling on each side of the median channel. The thorax is somewhat narrowed at the base; shining, the striation not very distinct; transversely impressed at the base, with a shallow round fovea in the middle of the posterior margin; the posterior ridge is distinct, curved outwards and downwards to meet the margin beyond the middle. The elytra have the subcosta very distinct, gradually approaching the suture posteriorly; each elytron has a small pale yellow spot at about one third from the base, and a narrow sutural stripe extending from rather behind the middle to the apex; the apex itself is very deeply cut out, leaving the sutural angle acutely dentiform. The prosternal chin-piece is arcuate, nearly straight in the middle. The prosternum is strongly punctured, sparsely pubescent; the intercoxal process is subparallel, with the lateral margins thickened, raised, and smooth, the apex truncate, with the angles slightly prominent. The metasternum has a small elongate central puncture, with an elongate white spot at some distance from the side. The abdomen is finely and not very closely punctured; the basal segment with a white stripe at some distance from the side; the second and third segments each with a small white spot at the side.

### 6. **Paradomorphus elegantulus.**

Cupreo-æneus, parum nitidus, capitis vertice thoraceque purpureis, elytris nigro-æneis flavo-maculatis; capite antice crebre rugoso, vertice strigoso; thorace transversim strioloso, postice transversim leviter impresso, ad angulos anticos macula alba notato; elytris creberrime subasperato-punctatis, aureo-maculatis, apice emarginato, denticulato.

Long. $2\frac{3}{4}$ lin.

*Hab.* Panama, Taboga I. (*Champion*).

The thorax has a small dark green spot at the middle of the base; the smooth transverse spaces between the striolæ are crossed by numerous short, fine striæ; the posterior ridge is smooth, nearly straight, directed outwards and keeping close to the side. The elytra are flattened on the back, with scarcely any subcosta; the suture is only raised at the apex; each elytron has a pale golden spot in the basal impression, a small one before the middle, and an elongate one behind the middle. On the underside are the following pure white pubescent marks: a line on the prothoracic episterna; a narrow line on the metathoracic episterna; a broad stripe on the side of the metasternum; a small dot at some distance from the side of the basal abdominal segment; and a spot at the side of each of the three apical segments. The mesothoracic episterna and the posterior coxæ are more or less clothed with white. There is a pale yellow spot on the upper margin of the basal segment of the abdomen, and at this point the lateral carina is slightly bent at an angle. The prosternal chin-piece is rounded. The prosternum is sparsely punctured; the intercoxal process is closely punctured, finely margined laterally, a little widened behind the coxæ, and then suddenly narrowed obliquely, with a narrow central process.

### 7. **Paradomorphus latevittatus.**

Elongatus, subparallelus, cyaneus, parum nitidus; elytris purpurascentibus, vitta suturali lata rufo-ochracea (basi apiceque haud attingente) ornatis; pectoris lateribus pube rufo-ochracea vestitis; abdomine æneo. Long. $4\frac{1}{3}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

The head is closely rugose; in front it is longitudinally and rather widely sulcate, with a little whitish pubescence above the clypeus. The antennæ are very short. The thorax is transversely, rather finely striolate, and finely punctured, and impressed at the sides; the posterior ridge is distinct, turned outwards and downwards to meet the margin just in front of the middle. The elytra are not much attenuated at the apex (where they are separately obtusely rounded and finely denticulate); the surface is closely asperate; the subcosta is not strongly marked. The prosternal chin-piece is rather straight in front, with a slight indication of a notch in the middle. The prosternum is sparsely pubescent, and the pubescence is very short; rather closely and roughly punctured; the intercoxal process is flat, with the lateral margins raised and smooth, abruptly constricted at the apex. The sides of the metasternum, the posterior half of the episterna, the posterior coxæ, the upper lateral margin of the abdomen, and a spot at the side of the second segment are covered with reddish-yellow pubescence. The episterna are closely punctured, with the inner margin smooth. The abdomen is finely and not very closely punctured, except at the base of the basal segment, where the punctuation is very dense; the lateral carina is very distinctly sinuous at about the middle.

## 8. **Paradomorphus plagiatus.**

Nigro-æneus; capite cupreo, rugoso; thorace cupreo, transversim ruguloso, basi cyaneo-viridi; elytris obscure cyaneis, dimidio apicali viridi-aurato, aureo-pubescente, apice denticulato.
Long. 3 lin.

*Hab.* Mexico, Cordova (*Sallé*).

This species very much resembles *Agrilus basalis*, Chevr., but is rather broader, and has the basal joint of the posterior tarsi very short. The head has a small blackish fovea in the middle of the front. The thorax is convex, without any discoidal impression, covered with curved rugæ; the basal fourth is smoother and green; there is a spot of white pubescence at the anterior angles. The elytra are rather flat, with no subcosta, not much acuminate at the apex, where they are separately obtusely rounded and denticulate, the second tooth from the suture being a trifle the largest; the apical half is clothed with short golden pubescence, and this pubescence also ascends a short distance up the side, and may be traced obliquely across the base towards the scutellum. The prosternal chin-piece is straight in front. The prosternum is closely and finely punctured, with grey pubescence; the intercoxal process is very slightly arched posteriorly, and suddenly constricted at the apex, leaving a central narrow process at a slightly lower level. The episterna is densely punctured and pubescent. The posterior coxæ are clothed with orange-coloured pubescence. The abdomen is shining, not very closely punctured; the basal segment with a small silvery-grey spot in the middle of the side; the second and third segments with larger spots; the lateral carina of the basal segment is not sinuous in the middle.

## 9. **Paradomorphus biplagiatus.**

Sat brevis, griseo-niger, griseo-pubescens; thorace crebre punctulato, obsolete transversim striolato; elytris obscure cyaneo-viridibus, utrinque plaga rufo-cuprea ornatis; corpore subtus omnino pube griseo-alba dense vestito.
Long. $2\frac{3}{4}$ lin.

*Hab.* Mexico, San Miguel del Rio (*Sallé*).

The head is finely punctured; with some grey pubescence radiating from a very slight median impression. The thorax is not very convex, broad, narrowed at the base, where it is transversely impressed, sparsely pubescent; the posterior ridge is distinct, but short, obliquely directed inwards. The elytra are very slightly enlarged behind the middle, and then narrowed to the apex, which is almost imperceptibly serrate; each elytron has a reddish-coppery patch extending from the shoulder to a little beyond the middle, not reaching to the suture; near the apex there is a patch of whitish pubescence. The prosternal chin-piece is scarcely emarginate. The prosternum is closely punctured; the intercoxal process is flat, parallel, truncate at the apex. The metasternum has a small fovea at the posterior margin. The episterna are closely punctured. The abdomen is closely and finely punctured, the margins of the segments

steel-blue; the lateral carina of the basal segment has a very slight sinuosity in the middle.

### 10. **Paradomorphus corrugatus.**

Æneus, elytris obscure rufo-cupreis; capite crebre rugoso, antice convexiusculo; thorace antice bene convexo, fortiter rugoso, punctato; elytris depressis, crebre asperatis, regione suturali obsolete parce flavo-griseo-pubescente; corpore subtus parce brevissime flavo-griseo-pubescente.
Long. 3–3¼ lin.

*Hab.* Mexico, Juquila, Toxpam (*Sallé*).

The head in some examples is finely, in others coarsely, rugose; this is no doubt a sexual distinction. The thorax is very convex; the lateral impression is not deep, and does not extend to the anterior angles (it is scarcely visible from above), and in some lights there is an indication of a longitudinal median impression; the posterior ridge is very distinct, curved. The elytra have the subcosta only very slightly marked in the female, more distinct in the male; the apex is acuminate, finely serrate. The prosternal chin-piece is gently arcuate. The prosternum is closely and not very finely rugose; the intercoxal process is rather flat and pubescent, very slightly narrowed posteriorly, emarginate at the apex. The metasternum has a fine impressed median line; the episterna are finely punctured and pubescent. The abdomen is moderately closely punctured, the basal segment at the sides and at the intercoxal process very closely so; the latter is obtusely angular. The lateral carina of the basal segment is rather strongly and widely sinuate about the middle.

### 11. **Paradomorphus persimilis.**

Præcedenti similis et affinis, differt tamen elytris postice magis acuminatis; processu prosternali ad apicem emarginato, angulis paullo elevatis.
Long. 3–3½ lin.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*).

I separate this species with doubt from the preceding. It only differs in having a more decided longitudinal impression on the thorax. The elytra are rather more acuminate, and have the subcosta very distinct. The prosternum is more closely punctured, and the angles at the apex are slightly raised.

### 12. **Paradomorphus complexus.**

Subdepressus, æneo-cuprascens, nitidus, thorace postice elytrisque olivaceo-virescentibus; capite sat crebre punctato, medio canaliculato-impresso; thorace parum convexo, punctis transversis crebre aspersis, medio leviter bi-impresso; elytris creberrime asperatis, apice parum serrulato.
Long. 4½ lin.

*Hab.* Nicaragua, Chontales (*Belt*).

The head has the punctures fine, but distinct, and slightly separated from each other; the median longitudinal impression is slightly narrowed at the middle of the

face. The thorax has in the middle two shallow impressions, which in some lights appear united; the punctures are generally separated from each other vertically, but are frequently united transversely or obliquely; the posterior ridge is well marked, shining, turned down to the margin in front beyond the middle, and then running parallel to the margin to the front angle. The elytra are evenly and rather coarsely asperate; the subcosta is only slightly marked. The prosternal chin-piece is very slightly emarginate. The prosternum is closely and coarsely punctured, longitudinally impressed in the middle; the intercoxal process is curved down at the apex, and obliquely narrowed. The episterna are rather closely and moderately strongly punctured, with a little pubescence on the outer edge. The abdomen has a transverse impression at a short distance from the side of the basal segment, indicating the division between the true first and second segments; the lateral carina is very slightly angular just behind the middle of the basal segment.

A specimen just received from Panzos, Vera Paz (*Conradt*), differs from the one from which I have taken the above description in being rather narrower, more brassy in colour, and in having the thorax slightly rugulose. I am unable to say whether these differences are sexual or specific.

## AGRILUS.

*Agrilus,* Stephens, Illustr. Brit. Ent., Mandib. iii. p. 239 (1830).

The members of this genus are very numerous, and are represented in all quarters of the globe; no less than 406 species are enumerated in Gemminger and Harold's Catalogue (1869), and many have been since described. The number here recorded from Central America is 141, and of these 52 are described from single specimens only. Besides these there are several obscure species which I have not ventured to characterize from unique examples.

As is commonly the case in large genera, a linear arrangement of the species is difficult and I have been unable to find characters by which *Agrilus* can satisfactorily be divided into sections.

The antennæ vary somewhat in length in the different species, but not in any very marked degree. They are, however, very long in *A. manatus*, *A. femoralis*, *A. antennatus*, and *A. sobrinus*; and in *A. planatus* and its allies they are long and broad.

The head, when viewed from above, has its anterior outline sometimes arched, as in *A. vittulus* (Tab. IV. fig. 18 *a*); emarginate, as in *A. divaricatus* (Tab. IV. fig. 16 *a*); or incised, as in *A. exustus* (Tab. IV. fig. 13 *a*), &c. *A. gracilipes* and its allies have the head flattened and vertical in front; but every gradation between this and the inclined head of *A. furcillatus* may be met with. The males frequently have the front of the head of a brighter colour than in the females, and the sculpture is often finer.

The thorax has in the larger number of species a more or less clearly-defined ridge near the posterior angles ("posterior ridge"); and I have divided the genus into two

groups, in the first of which it is present, and in the second absent. A small number of species (*A. squalus* &c.) have the posterior ridge represented by an oval swelling. In the following descriptions I have given the direction of the ridge as viewed from above; in most cases a side-view of the thorax is given on the Plates, showing the curve of the ridge as viewed from the side.

The elytra have very constantly the sutural area impressed, leaving a more or less clearly defined raised line about the centre of each elytron: this raised line I have called the "subcosta." The apices are often divergent or expanded, but the species with this character cannot well be associated.

The prosternum is in front furnished with a more or less semicircular projecting piece ("chin-piece"), which furnishes useful specific characters; the portion between and behind the coxæ ("intercoxal process") is very often more finely sculptured in the male than in the female, and in the former is frequently pubescent. Posteriorly this process is sometimes nearly horizontal, gradually narrowed to the apex, the apex entering the mesosternal cavity (*A. ratus* &c.). In some species the part behind the coxæ is very obliquely narrowed, leaving a narrow central process (which enters the mesosternal cavity) at a slightly lower level; in others this narrow central process is still lower, and appears quite distinct from the rest of the intercoxal process. When this is the case I have, in the following descriptions, described only the part which is visible. In every case, however, it is necessary to draw out the process from the mesosternum in order to see its form at the apex. This is easily done by laying the specimen on its back, when in a relaxed state, and pressing the chin-piece while the body is held firmly by a finger of the left hand. With pinned examples it is necessary to hold the specimen firmly between the thumb and first finger while the prothorax is bent back, otherwise the elytra become dislocated from the thorax.

The metathoracic episterna vary very little in form, but the sculpture and manner in which the pubescence is arranged afford useful specific characters.

The abdomen has the first and second segments united into one; in a few species, however, which I have placed at the end of the genus, the division between these segments is well marked by an impressed line. The lateral margins of the segments are slightly incrassate and form a ridge ("lateral carina"). This lateral carina of the basal segment furnishes excellent specific characters: viewed laterally it is always more or less arched at the base, and posteriorly it is sometimes continued in a straight line (rectilinear), as in *A. acuductus*, *A. sublateralis*, &c.; it slightly or greatly alters its direction (angulated) at the point of division between the true first and second segments (as in *A. manatus*), or has a notch at this spot, and sometimes has a deep semicircular dip down (*A. divaricatus* &c.). In a few species (*A. xanthonotus* &c.) the males have a longitudinal punctured or striated impression on the basal segment.

The following is the arrangement that I have adopted. Many of the species seem

almost equally out of place in any part of the series; in these cases I have inserted them where they seem to cause least interruption:—

| | Species. |
|---|---|
| I. Abdomen with the first and second segments united into one . . . . . | 1–134 |
| A. Thorax with very uneven surface; the elytra more or less variegated with grey pubescence . . . . . | 1–6 |
| B. Thorax with a posterior ridge [1]. | |
| * Elytra with some distinctive character at the apex (dilated, diverging, or spined) [2]. | |
| § Elytra arched downwards at the apex . . . . . | 7–9 |
| §§ Elytra horizontal. | |
| † Thorax sulcate . . . . . | 10–23 |
| †† Thorax not sulcate [3]; generally with two impressions, one in front of the other . . . . . | 24–45 |
| ** Elytra with the apex simply denticulate or serrate . . . . . | 46–89 |
| *** *A. furcillatus* and *A. sulcatus* . . . . . | 90–91 |
| **** *A. eupalamus* . . . . . | 92 |
| ***** *A. catherinæ*, *A. splendidipodex*, and *A. aureus* . . . . . | 93–95 |
| C. Thorax without posterior ridge. | |
| * Apex of each elytron emarginate . . . . . | 96 |
| ** Apex of the elytra simple . . . . . | 97–107 |
| *** Thorax more or less coppery; elytra uniformly granular, with grey pubescence; the antennæ sometimes very broad . . . | 108–111 |
| **** *A. blandulus* and *A. signatus* . . . . . | 112–113 |
| ***** *A. albofasciatus* . . . . . | 114 |
| ****** Abdomen in the male with a longitudinal impression on basal segment . . . . . | 115–120 |
| D. Thorax with the posterior ridge replaced by an oval swelling [4]. | |
| * Upper surface smooth and shining, at most with only a slight longitudinal thoracic impression. | |
| § Apex of the elytra expanded . . . . . | 121 |
| §§ Apex of the elytra simple . . . . . | 122–127 |
| ** Upper surface less smooth; thorax with a deep fovea or channel . | 128–134 |
| II. Abdomen with the first and second segments distinct . . . . . | 135–141 |

1. **Agrilus inæqualis.** (Tab. IV. figg. 10, 10 *a*.)

Obscure æneus, nitidus; capite excavato, binodoso; thorace subquadrato, vermiculoso, disco longitudinaliter profunde canaliculato, lateribus oblique inclinatis, basi foveolatis; elytris cyanescentibus, unicostatis,

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[1] Except *A. ignotus*, which has a swelling.

[2] Except *A. cavatus* and *A. funestus*.

[3] Except *A. apicalis*.

[4] Except *A incertus*, which has a ridge.

post medium ampliatis, dein ante apicem angustatis, ad apicem paullo divaricatis, maculis plurimis irregularibus æneis confertim subtiliter rugulosis et griseo-pilosis impressis, interstitiis glabris, nitidis.

Long. 5 lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

The head is strongly and closely punctured, except on the inner side of the round swelling on each side of the lower part of the face; there is a very slight prominence above each eye. The thorax has its anterior margin somewhat raised in the middle, and projecting very slightly over the head; the impressions are marked with numerous short, curved, or wavy deeply impressed lines; the sides are rugulose; on each side of the central impression there is a small smooth spot on the elevated part. The elytra are transversely impressed at the base (leaving the shoulders somewhat elevated), and gradually curved down to the apex; the costa on each is very obtuse, interrupted at intervals by the small impressions; there are strong punctures on and just below the shoulder, and at the apex; and at the side behind the middle there are numerous asperities. The prosternal process is very strongly and closely punctured. The middle of the short metasternum and the intercoxal process of the abdomen are sparsely and delicately punctured. The sides of the abdomen are clothed with fine pubescence of a slightly golden colour, which forms a large spot on the second segment and a small one on the first and third segments.

### 2. **Agrilus diversus.** (Tab. IV. figg. 11, 11 *a*.)

Nigro-purpureus; capite cupreo, crebre punctato, fronte supra incisa, binodosa; thorace crebre punctato et flexuoso-strigoso, disco sat profunde impresso, lateribus rugulosis, antice oblique impressis, ad angulos posticos carina brevi lævi; elytris confertim subtiliter rugulosis, dorsim planatis, postice inclinatis, pallide griseo-maculatis, apice denticulato, lateribus obscure æneo-viridibus; prosterno creberrime punctato.

Long. 5 lin.

*Hab.* MEXICO, Toxpam (*Sallé*); GUATEMALA, Chacoj in Vera Paz (*Champion*).

The ovate punctured swellings on the face of this species are on the upper part raised above the level of the eyes. The thorax has its discoidal impression not so deep as in the preceding species, narrow in the middle, widest behind; the raised parts on the disc are generally tinted with green. The pale grey pubescence which forms the markings on the elytra is extremely short. Each elytron has a small acute tooth at the apex near the suture. The punctuation on the prosternum is very dense, less so on the metasternum (though confluent transversely). The abdomen in the middle is less closely and much less strongly punctured; the apical segments sparsely clothed with pale pubescence. The middle of the metasternum and abdomen are æneous. One example has the sides of the metasternum slightly coppery.

### 3. **Agrilus oculatus.**

Fusco-cupreus, parum nitidus; capite fortiter excavato; thorace fortiter punctato et vermiculoso, inæquali; elytris rugosis (maculis irregularibus lævibus notatis), fusco et æneo variegatis, litteris guttisque griseo-pubescentibus ornatis.

Long. 3–3½ lin.

*Hab.* Mexico, Cuernavaca in Morelos (*Sallé*, *Höge*).

The head is strongly punctured, with a large deep impression at the top of the face, continued in the middle down to the clypeus. The thorax is convex, transversely impressed at the base; the disc with a longitudinal impression behind, and a round impression on each side of the front part; the sides only are very slightly arcuate. The elytra are as wide as the thorax at the base, a little enlarged behind the middle, attenuated at the apex; the subcosta is fairly well marked, nearly straight; there are numerous spots and marks of a brassy colour and these are finely rugose, the rest of the surface being fuscous and more shining. Each elytron has two (not very well defined) quadrate pubescent spots near the suture before the middle (one above the other); a more distinct ring at some distance from the apex (united to the side by a pubescent line); and an angulated band near the apex. The prosternal chin-piece is emarginate. The prosternum is closely rugose. The episterna have transverse lines of punctures. The abdomen is shining, æneous; the lateral carina of the basal segment is slightly interrupted about the middle, with a pubescent spot above; the second, third, and fourth segments have each a small whitish spot at the side.

### 4. **Agrilus sallæi.**

*Agrilus sallei*, E. Dugès, La Naturaleza, iv. p. 172, t. 6. figg. 3, 4 (1878)[1].

*Hab.* Mexico, Guanajuato [1], Leon [1].

### 5. **Agrilus velutino-maculatus.** (Tab. IV. figg. 12, 12 *a*.)

Nigro-purpureus, supra surdus, subtus nitidus; fronte purpurea, quadrinodosa; thorace antice bifoveato, basi macula mediana velutina, utrinque parce griseo-piloso; elytris nigris, griseo-pilosis, macula basali, fasciis undatis duabus apiceque nigro-velutinis, apice denticulato.

Long. 4 lin.

*Hab.* Mexico, Playa Vicente, Teapa (*Sallé*), Tapachula in Chiapas (*Höge*); Guatemala, Zapote, San Gerónimo (*Champion*).

The four obtuse nodes on the front of the head are placed, two on the lower part of the face, and two between the upper part of the eyes; the lower ones are a little larger than the upper pair and are more rounded. All the lower part of the face in many of the specimens is brassy instead of being purple; this is no doubt a sexual character. The thorax has its front margin slightly raised, gently arched forward; there are two distinct round foveæ on the front of the disc, an oblong shallow impression in the middle of the base, and a slight one within each posterior angle; the surface is closely and strongly punctured, the punctures partially confluent transversely, giving a rugulose appearance; the posterior ridge is short, not very distinct. The elytra are impressed at the base and beneath the shoulders, leaving the humeral callosity somewhat raised; the sutural region for about half the length is flattened, but there is no distinct costa;

the apical half is gradually inclined; the apices are slightly divergent and finely denticulate. On each elytron there are the following black marks:—an ill-defined spot near the base; an oblong spot before the middle, near the suture; and a short stripe behind the middle, united posteriorly to a rather broader, slightly oblique band which joins the margin, the stripe and the band together forming a letter L; the apex is also black.

The series of specimens from Guatemala have the apices of the elytra a trifle more divergent than in the three individuals from Mexico; but without a series from Mexico I do not like to separate the two forms as species.

### 6. **Agrilus exustus.** (Tab. IV. figg. 13, 13 *a*.)

Elongatus, subparallelus, parum nitidus, confertim sculpturatus, cupreo-æneus, thorace fasciaque elytrorum post medium lata griseo-purpurascentibus, abdomine purpurascente; capitis vertice macula velutina ferrugineo-nigra ornato; elytris obsolete marmoratis, ad apicem parum dilatatis, subtiliter serratis; femoribus cupreis, tibiis tarsisque purpurascentibus.

Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

This species somewhat resembles *A. velutino-maculatus* in general form and characters, but is quite differently coloured. The head is shining, coppery-brass; the upper part of the forehead is rather deeply concave, with a moderately large dark brown (nearly black) spot on the upper part; the lower part of the face is longitudinally canaliculate (the channel filled with whitish scales), with a very distinct somewhat round tumour on each side of it, the upper part of the tumours being slightly flattened. The thorax is finely punctured and rugulose; the disc with a shallow oblong impression at the base, and two indistinct impressions in front. The scutellum is moderately large and distinct. The elytra are densely and finely punctured; of an obscure brownish-brassy colour at the base and apex; the part behind the middle obscure greyish-purple; the apex curved down and also convex transversely.

### 7. **Agrilus inclinatus.** (Tab. V. figg. 1, 1 *a*, *b*.)

Brunneo-æneus, hic et illic cupreo tinctus; thorace disco minus dense sat obsolete punctato, medio impresso, ad angulos posticos linea elevata introrsum directa instructo; scutello lævi; elytris postice gradatim angustatis, apicem versus inclinatis, nitidis, cyaneo-æneis (ad basin æneis, lateribus apiceque purpureo-cupreis), subtiliter discrete punctulatis, maculis nonnullis albo-tomentosis ornatis, apice paullo dilatato et denticulato.

Long. 4 lin.

*Hab.* Mexico, Vera Cruz (*Sallé*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

The top of the head is marked with numerous confluent flexuous impressed lines; in the middle there is a well-defined smooth channel, which widens out into a nearly round impression in the middle of the face, and on each side of this there is a slight round swelling; the space above the clypeus is closely and rather strongly punctured; the

clypeus and antennæ are coppery. The thorax has the impression on the disc narrow and shallow in front, much broader behind, deepest a little behind the middle, and at this part is closely rugose; the surface on each side of the impression is marked with not very closely placed punctures and some obscure undulating transverse lines. Each elytron has the base occupied by a shallow, finely punctured sparsely pubescent impression; the rest of the surface of the elytra is shining, and the punctuation is fine and irregular, except at the side below the shoulder where the surface is slightly roughened; the subcosta is smooth and not much raised; in the sutural area there are three pairs of white pubescent spots—the first pair just before the middle, the second at the middle, and the third near the apex; at the side rather behind the middle there is a small transverse spot; and each elytron has about six strong acute teeth at the apex. The prosternum is closely and finely rugose-punctate; the episterna are finely punctured and clothed with white pubescence. The metasternum is sparingly and very delicately punctured, but has an elongate finely punctured and pubescent stripe near the side. The metathoracic episterna are smooth and shining in the middle, but punctured and pubescent at the base and sides. The abdomen is very delicately and not closely punctured; but at the sides of the basal segment the punctures are rather stronger, in places arranged in curved lines.

8. **Agrilus sodalis.** (Tab. IV. figg. 14, 14 *a*.)

Niger, nitidus; capite quadrinodoso, purpurascente; thorace sat fortiter minus crebre punctato, disco postice profunde foveolato, utrinque macula lævi; elytris fere glabris, ad basin impressis, postice inclinatis, haud costatis, guttulis numerosis griseo-albis ornatis, apice truncato, angulis exterioribus acute productis.

Long. $4\frac{1}{4}$ lin.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

The head has two somewhat round nodes between the eyes at the upper part, and two lower down on the face, all distinctly and moderately closely punctured. The thorax at the sides is somewhat rugulose; the anterior margin is closely and rather strongly punctured; the raised surface of the disc, round the discoidal fossa, is smooth, except a few punctures on each side of the middle; the lateral margins are tinted with violet. The elytra have a somewhat deep impression at the base of each, and there is a very shallow impression at the suture a little way from the base, another at the middle, and a third behind the middle; these three impressions are very slight and partially confluent; the very short greyish-white pubescence forms two small approximate rings close to the suture, at one quarter from the base; there is a broad fascia behind the middle (composed of numerous pubescent spots), and a similar fascia near the apex; the parts occupied by the pubescent spots are finely punctured, the rest of the surface is smooth; in some aspects the surface has a bronzy tint.

### 9. **Agrilus distans.** (Tab. V. figg. 2, 2 *a*, *b*.)

Viridi-æneus, subtus brunneo-æneus, sat nitidus, creberrime asperato-punctatus; elytris maculis sex albo-pubescentibus.
Long. 4 lin.

*Hab.* Mexico, Oaxaca (*Höge*).

The head has some closely placed converging curved punctured lines on the vertex; the face is rather strongly and closely punctured; there is a very shallow impression in the middle. The thorax has two very shallow inconspicuous impressions on the disc, one anterior, the other posterior; the punctures are moderately close together, transversely elongate, and often united to each other transversely by fine lines; on each side of the front of the disc the surface is rather more rugulose; the usual lateral impression is brownish-æneous, with some whitish pubescence at the anterior part; the posterior ridge is distinct, smooth—commencing from the angle and curving round, it nearly touches the side about the middle. The elytra are closely and somewhat strongly asperate-punctate; the subcosta is well marked and sculptured in the same way as the rest of the surface; the basal impression is well marked and slightly pubescent; just before the middle there is a spot close to the suture, and at some distance from the apex another more elongate and whiter spot. The prosternum is very closely and rather strongly punctured; the episterna are closely punctured and clothed with pale grey pubescence. The metathoracic episterna are rather closely and moderately finely asperate-punctate. The abdomen is distinctly and not very closely punctured. The lateral carina of the basal segment is distinctly angulated rather behind the middle, with a small spot above (fig. 2 *b*).

### 10. **Agrilus squaliformis.**

*Agrilus squaliformis*, Thomson, Typi Bupr. p. 85 [1].

*Hab.* Mexico, Cordova, Puebla (*Sallé*); Guatemala [1], Dueñas, San Gerónimo 3000 feet (*Champion*), Chimaltenango (*Conradt*).

This species has the lateral carina of the basal segment of the abdomen very strongly angulated behind the middle.

Three examples, two from Mexico and one from Guatemala, are of a beautiful steel-blue colour instead of the usual brassy-æneous.

### 11. **Agrilus divaricatus.** (Tab. IV. figg. 16, 16 *a*, *b*.)

Brunneo-æneus, subtus cuprescens, nitidus; capite antice longitudinaliter sulcato, macula flavo-pilosa ornato; thorace crebre subtiliter punctulato, transversim aciculato, disco medio sat profunde sulcato; elytris postice bene attenuatis, ad apicem parum divaricatis et cupreis, regione suturali impresso et creberrime punctato; abdomine medio quam elytra latiore, supra utrinque macula magna flavo-pilosa ornato; episternis metathoracis flavo-pilosis.
Long. 6 lin.

*Hab.* Mexico, Cuernavaca in Morelos (*Sallé*, *Höge*), Almolonga, Iguala in Guerrero (*Höge*).

The head is deeply canaliculate in front, and transversely impressed on the vertex between the eyes; the channel occupies about one third the width of the space between the eyes. The thorax has the deep impression on the disc closely rugulose, and the raised surface immediately surrounding the impression is studded with small transverse punctures; the posterior ridge is short, curved outwards and downwards to join the lateral margin, and forms a continuous ridge to the anterior angle. The elytra have the depressed sutural area and the sides closely and somewhat rugosely punctured; the subcosta is delicately and not very closely punctured; there is a scarcely noticeable yellow pubescent spot close to the suture, before the middle, and a line of pubescence behind the middle, bordering the suture; the apex of each elytron is obliquely truncate on the inner side and armed with about six small teeth. The lateral carina of the basal segment of the abdomen is semicircularly emarginate at the place occupied by the yellow spot.

The example from Almolonga and one in the British-Museum collection differ from the type from Cuernavaca in having the elytra relatively longer, more narrowed at the apex, and the inner apical truncature more oblique. Having only two examples I do not venture to separate these as a distinct species.

### 12. **Agrilus immaculifrons.**

Præcedenti simillimus, differt tamen fronte macula flava nulla; elytrorum truncatura apicali minus obliqua, dente exteriore magis acuto.

Long. 6–7 lin.

*Hab.* Guatemala, Dueñas (*Champion*).

This species closely resembles *A. divaricatus*, but is easily recognized by the absence of the yellow pubescent spot on the forehead. There is also no pubescence on the metathoracic episterna. The apical truncature of the elytra is less oblique, the external angle more dentiform. The punctuation is rather stronger throughout.

### 13. **Agrilus lævipennis.**

Cyaneo-niger, nitidus, thorace elytrisque ænescentibus; thoracis disco fere lævi, medio canaliculato; elytris tenuiter punctatis, vitta mediana maculaque post medium flavis et vitta apicali fere alba ornatis, singulo ad apicem emarginato, angulo externo spiniformi.

Long. 6–7½ lin.

*Hab.* Mexico, Cordova (*Sallé*); Guatemala, Sabo in Vera Paz (*Champion*).

The head is somewhat concave in front, with two oval swellings. The thorax has the disc extremely finely and obscurely punctured; the elongate discoidal impression is well marked; the posterior ridge is short and thick, and close to the margin. The elytra have the subcosta well marked, smooth; the sutural area is finely and not very closely punctured, and the margin is finely but not so distinctly punctured; the apex of each elytron is emarginate, the inner angle denticulate, the outer one spiniform and more

produced than the inner angle. The prosternal process is rather convex, finely and not very closely punctured. The metasternum is extremely delicately punctured, and has a stripe of golden-yellow at the side continued on to the posterior coxæ. The meta-thoracic episterna are nearly smooth, with the outer margin closely punctured. The abdomen is finely punctured; it has a stripe of golden-yellow pubescence on the upper margin of the basal segment, and a rather large spot at the side of the second segment; there is also a straight stripe of pale pubescence on each side of the basal segment at some distance from the side; the lateral carina of the basal segment is rectilinear posteriorly, with a small notch behind the middle.

Two of the examples from Cordova are smaller in size, and have the elytra purple.

### 14. **Agrilus balænoides.** (Tab. V. fig. 4.)

Supra fusco-cupreus, surdus; subtus purpureo-cupreus, nitidus; capite crebre punctato, fronte profunde excavata; thorace fortiter transversim striolato (striolis punctatis), disco longitudinaliter canaliculato-impresso, impressione fusco-velutina; elytris confertim fortiter subrugoso-punctatis, medio plaga oblonga fusco-velutina ornatis, ad apicem divergentibus, margine apicali denticulato.

Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Cuernavaca (*Sallé*), Misantla (*Höge*).

A very distinct species, having the apices of the elytra widely diverging. The male has a stripe of yellowish pubescence along the whole length of the sternum; the same part in the female is bare, but densely punctured. There is a large patch of yellow pubescence at the side of the metasternum (extending on to the coxæ) in both sexes.

### 15. **Agrilus centralis.** (Tab. V. figg. 3, 3 *a*, *b*.)

Brunneo-æneus, nitidus; capite excavato, antice binodoso; thorace tenuiter punctulato, medio late profunde canaliculato, canaliculo crebre fortiter punctato; elytris tenuiter haud crebre punctulatis (ad suturam crebrius punctatis), maculis sex parvis sordide flavis notatis, ad apicem ipsum perparum dilatatis, denticulatis, singulo elytro dente centrali validiore instructo; pectore abdomineque flavo-maculatis.

Long. 5 lin.

*Hab.* Guatemala, Chimaltenango (*Conradt*).

The head is broadly channelled or excavated, at the top as well as in front; rather strongly punctured, the vertex with curved lines of punctures; at the lower part of the face there is on each side an oblique node. The thorax is transverse, with the sides gently arcuate; finely but not very closely punctured and obscurely striolate; the longitudinal median impression has numerous curved lines of punctures; the posterior ridge is well marked, placed close to the margin, and curved outwards and downwards to the margin (fig. 3). The elytra have the subcosta strongly marked but obtuse; the punctures on and outside the subcosta are fine and somewhat separated from each other, those in the sutural area are stronger and a little closer together, but not crowded; the apex is a little wider than at the part just before it, the outer angle more or less

rounded and denticulate, the inner angle with one or two teeth; in the middle of the apex of each elytron there is a strong acute tooth (fig. 3 *a*). One example has a rather more distinct tooth at the outer angle. Each elytron has three small whitish or yellowish spots: one not far from the base, a second at one third from the apex, and the third nearer to the apex than to the second spot. The prosternal chin-piece is scarcely emarginate. The prosternum is finely punctured in front, the intercoxal process more strongly punctured, very lightly impressed in the middle, a little widened at the apex, which is slightly angular (almost truncate), with the central process at a lower level. The episterna, the posterior angle of the metasternum, and the outer part of the posterior coxæ are clothed with golden pubescence. The abdomen has a moderately large spot on the upper margin of the basal segment, an elongate spot on the upper margin of the second segment, and a larger spot at the side of the same segment, golden-yellow; the lateral carina of the basal segment is strongly angulated behind the middle (fig. 3 *b*).

### 16. **Agrilus lætus.** (Tab. V. figg. 5, 5 *a*.)

Angustus, nitidus; capite olivaceo-æneo, transversim strigoso, antice longitudinaliter canaliculato; thorace olivaceo-æneo, antice bene convexo, ad basin transversim impresso, tenuiter undatim striolato, disco longitudinaliter impresso; elytris sat crebre punctatis, maculis octo aureo-flavis ornatis, ad apicem emarginatis, denticulatis.

Long. 5 lin.

*Hab.* Mexico, Orizaba (*Sallé*).

The head is rather unusually rough in front; the longitudinal impression is well marked but not abrupt, parallel. The thorax has its anterior margin arched forwards in the middle; the oblique fine striolæ are not very close together, and are marked at intervals with very fine punctures; the discoidal impression extends nearly the whole length of the thorax and is narrowed at the base; the posterior ridge is sharp, well-defined, scarcely curved, and does not reach the margin. The elytra have the subcosta not very well marked, except at the middle; the sutural area is closely and rather coarsely punctured, the rest of the surface similarly punctured, but the punctures are not quite so close together; each elytron has a yellow spot in the basal impression, another before the middle, a third at the middle, and an oblique streak at some distance from the apex; the apex is emarginate, with two or three very small teeth at the sutural angle and several very small ones on the outer apical margin. The prosternal process is rugose, slightly pubescent. The metasternum is very unequally punctured, shining; with a yellow spot at the posterior angle. The metathoracic episterna are shining, with some irregular punctures. The abdomen is somewhat evenly punctured all over, the punctures distinct and moderately separated from each other; there is a yellow spot at the side of the second segment; the lateral carina of the basal segment is deeply angularly emarginate behind the middle (fig. 5 *a*).

### 17. **Agrilus nodifrons.**

Supra æneo-cupreus, subtus cupreus; fronte profunde incisa; thorace confertim sat fortiter vermiculoso-strigoso, disco in longitudinem profunde late impresso; elytris obsolete griseo-maculatis, ad apicem paullo divaricatis, denticulatis.

Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Etla (*Sallé*); Nicaragua, Chontales (*Belt*).

The head is concave above, deeply incised anteriorly, the incision having a horizontally compressed node on each side, only visible when viewed from above. The thorax has the deep longitudinal impression more finely strigose than the rest of the surface; on the ridges between the striæ on the raised parts of the disc some fine punctures may be seen here and there. The elytra are asperate-punctate; there is a deep impression at the extreme base within the shoulder; the subcosta is well marked and smooth, but it disappears at some distance from the apex; the extreme apex has a very narrow coppery border. The prosternum is finely rugose in front; shining and coarsely punctured posteriorly. The metasternum is clothed with pale yellow pubescence. The metathoracic episterna are smooth and shining at their base. The abdomen is smooth and shining, very delicately and sparingly punctured; the sides of the basal segment are moderately strongly vermiculate-punctate; the next segment has a large triangular spot of pale yellow pubescence at the side; the lateral carina of the basal segment is slightly angulated behind the middle.

### 18. **Agrilus discoidalis.** (Tab. V. figg. 7, 7 *a*.)

Elongatus, parum nitidus, brunneo-æneus, capite cuprascente, elytrorum apice purpureo-cupreo; thoracis disco sat fortiter punctato, transversim ruguloso, medio excavato, lateribus flavo-pubescentibus; elytris confertim rugoso-punctatis, apicem versus lævioribus, subcosta nitida, parcius subtilius punctulata, prope suturam vitta integra pube aurea ornatis.

Long. $6\frac{1}{2}$ lin.

*Hab.* Mexico (*Brit. Mus.*).

Viewed from above, the head is moderately triangularly emarginate in front; the face is closely and moderately strongly punctured, impressed in the middle with a golden pubescent stripe down the centre. The thorax has a very large oblong-ovate deep median impression appearing nearly one third the width of the thorax, and the impression is as closely and strongly punctured and rugulose as the rest of the disc; the posterior ridge is short, slightly curved, obtuse, punctured, not conspicuous when viewed from above. The elytra have a stripe of golden pubescence extending from the base to the apex, just inside the costa; the surface between this stripe and the suture is rather strongly rugulose for two thirds the length of the elytra, then it is finely punctured; the sides are also rugulose, except towards the apex. The prosternum is strongly punctured, the intervals between the punctures very unequal, so that some of the punctures are close together and others more widely separated. The middle of

the metasternum is strongly punctured, the punctures not very close together; the episterna are finely and closely asperate-punctate. The abdomen has the punctuation fine, the punctures not very close together in the middle, closer together at the sides (especially at the base of the segments); the basal segment has some irregular transverse lines of stronger punctures at the sides; the lateral carina of the basal segment is rather strongly angulated behind the middle (fig. 7 *a*).

### 19. **Agrilus cavatus.**

*Agrilus cavatus,* Chevr. Silberm. Rev. Ent. v. p. 99 [1].
*Agrilus texanus,* Crotch, Proc. Ac. Phil. 1873, p. 94 [2].

*Hab.* North America, Texas [2].—Mexico (*Sallé*) [1], Northern Sonora (*Morrison*), Cerro de Plumas, Almolonga, Acapulco in Guerrero (*Höge*), Cordova (*Sallé*, *Höge*), Vera Cruz, Jalapa (*Höge*).

The specimens from Northern Sonora were received with the name *A. texanus*, Cr.; and, judging from the very brief description, this determination appears to be correct, in which case I think the separation of *A. texanus* from *A. cavatus* is impossible.

### 20. **Agrilus subcarinellus.**

*Agrilus subcarinellus,* Thomson, Typi Buprest. p. 89 [1].

*Hab.* Mexico [1].

This species is stated to be allied to *A. cavatus*, Chevr.

### 21. **Agrilus pilosellus.**

*Agrilus pilosellus,* Thomson, Typi Buprest. p. 90 [1].

*Hab.* Mexico [1].

This species is described as allied to *A. texanus*, Cr., which is a synonym of *A. cavatus*, Chevr.

### 22. **Agrilus correctus.**

*Agrilus correctus,* Thomson, Typi Buprest. p. 90 [1].

*Hab.* Guatemala [1].

"Præcedenti (*A. pilosellus*) refert, sed valde diversus."

### 23. **Agrilus funestus.**

*Agrilus funestus,* Gory, Mon. iv. Suppl. p. 221, t. 36. f. 212 [1].

*Hab.* Mexico [1], Cordova, Playa Vicente, Tuxtla, Parada, Juquila (*Sallé*), Cerro de Plumas, Paso del Macho, Teapa in Tabasco (*Höge*).

This species varies in colour, some examples being brassy-green, others blackish-purple.

### 24. **Agrilus excisus.** (Tab. V. figg. 6, 6 *a*.)

Obscure brunneo-æneus, parum nitidus, subtus cuprascens; capite antice rufo-cupreo, subopaco; thorace sat crebre punctato et transversim ruguloso, disco bi-impresso, angulis posticis linea nitida curvata instructis; elytris ruguloso-punctatis, maculis octo pallide griseis ornatis, ad apicem cupreis, paullo ampliatis, singulo exciso, denticulato.

Long. $3\frac{2}{3}$ lin.

*Hab.* Panama, Bugaba 800 to 1500 feet (*Champion*).

The head is longitudinally impressed on the forehead, which is bigibbose; the punctures on the front are moderately close together and not very distinct, those on the vertex being much stronger and longitudinally confluent. The thorax has two shallow impressions on the disc, one at the base, and one in front of the middle; the posterior ridge is curved and punctured, and consequently not very conspicuous. The elytra have the punctures rather strong and united transversely by double parallel lines; the pale whitish-grey spots are placed in the sutural impression—one in the basal impression, one before the middle, one behind the middle, and one smaller one near the apex; at the apex they are parallel; each is emarginate, denticulate at the outer angle and sutural angle, with a strong acute spine at the outer side of the emargination (fig. 6 *a*). The prosternum is very closely and moderately strongly punctured, slightly shining, sparsely pubescent. The metathoracic episterna are moderately closely and strongly punctured and sparsely pubescent. The abdomen is shining, very finely and moderately closely punctured; at the sides are two obscure sparsely pubescent pale greyish spots; the lateral carina of the basal segment alters its direction posteriorly (fig. 6).

### 25. **Agrilus cribricollis.** (Tab. V. figg. 8, 8 *a–c*.)

Omnino brunneo-æneus, parum nitidus; thoracis disco fortiter sat crebre punctato, transversim ruguloso, medio in longitudinem profunde impresso; elytris tenuiter flavo-griseo-pubescentibus, regione suturali creberrime subtiliter punctulato, maculis nonnullis fere calvis nitidis ornatis, lateribus confertim rugosis, apice ipso rufo-cupreo, denticulato.

Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Jalapa (*Höge*).

The head is coarsely punctured on the vertex, triangularly impressed in front, the face very finely punctured and pubescent, with two small smooth raised spots in the middle; the clypeus and a line running along the inner side of the eye shining coppery. The thorax is coarsely punctured on the disc, with the intervals confluent transversely in front; the deep longitudinal impression is indistinctly punctured, narrowed in front; the sides are finely rugose; the posterior ridge is well defined, shining, rather swollen and raised anteriorly (fig. 8 *a*). The elytra are sparingly clothed with short greyish-yellow pubescence, except at the apex (fig. 8 *c*). Each elytron has four bare, more shining spots—the first, near the base, does not touch the subcosta nor the suture; the second and third touch the subcosta but not the suture;

the fourth, which is the largest, touches the margin, passes over the subcosta, but does not reach the suture. The prosternum and middle of the metasternum are closely and rugosely punctured. The abdomen is moderately strongly punctured, the punctures less crowded in the middle than at the sides; the segments have a narrow smooth border; the lateral carina of the basal segment alters its direction posteriorly (fig. 8 *b*).

### 26. **Agrilus sparsus.** (Tab. V. figg. 10, 10 *a–c*.)

Griseo-niger, vix ænescens, pube brevissima pallide grisea aspersus; thorace in longitudinem canaliculato-impresso, prope angulos posticos carina nitida cyanea instructo; elytris ad apicem bene angustatis, apice ipso purpureo-cupreo.

Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Oaxaca (*Höge*).

The head, when viewed from above, is not much impressed between the eyes; the vertex has some closely-placed, longitudinal, punctured, impressed lines; the face is finely pubescent, rather flat, with an impressed line down the middle. The thorax is very parallel; the longitudinal discoidal impression is rather deep, scarcely narrower in front than behind; all the discoidal area is strongly punctured and transversely rugulose (fig. 10); the sides are finely pubescent; the posterior ridge is well defined, linear, straight, shining, slightly sloping inwards anteriorly, nearly half the length of the thorax (fig. 10 *a*). The elytra are moderately closely asperate, rugulose on the disc, where the colour is darker; the subcosta is sculptured like the rest of the surface, distinctly raised at the middle, scarcely raised near the base, and obsolete towards the apex; the apices are slightly divergent (fig. 10 *b*); the very short pale pubescence, which is scattered over the surface, is placed so as to give the appearance of three pairs of spots on the sutural area—one pair before the middle, the second at the middle, the third behind the middle. The prosternum is closely rugose. The abdomen is marked by numerous confluent curved striæ; the last segment has some very small round tubercles at the extreme apex; the lateral carina of the basal segment is slightly flexuous (fig. 10 *c*).

### 27. **Agrilus aciculatus.** (Tab. V. figg. 11, 11 *a*.)

Brunneo-cupreus, parum nitidus, subtus cupreus; thorace transversim strigoso; elytris maculis oblongis flavo-griseis notatis, ad apicem paullo ampliatis acute multi-denticulatis.

Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Tapachula in Chiapas (*Höge*).

This species somewhat resembles *A. divergens*, but is more brownish-coppery in colour, the head and underside of the body coppery, and the sutural area of the elytra blackish between the spots. The head at the top is rather strongly strigose; the face punctured, rather deeply longitudinally impressed in the middle, the impression filled with golden pubescence. The thorax has two impressions on the disc, the posterior one rather the deeper. The elytra are finely and closely punctured on the sutural

area; the subcosta is raised, shining and less closely punctured; the sides are finely asperate-punctate. The prosternum is finely punctured in front, strongly and less closely punctured posteriorly. The sides of the basal segment of the abdomen are not very closely punctured, and the punctuation is obscure; the next segment has a large spot of somewhat golden pubescence at the side; the lateral carina of the basal segment alters its direction posteriorly (fig. 11 *a*).

### 28. **Agrilus squamulatus.**

Fusco-cupreus, subsurdus, thorace ænescente; capite antice dense rugoso flavo-pubescente; thorace crebre fortiter transversim striolato, disco longitudinaliter impresso; elytris creberrime rugosis, maculis octo sordide flavis ornatis, ad apicem paullo ampliatis, denticulatis, singulo in medio dente majore instructo; corpore subtus plus minusve sordide flavo-pubescente.

Long. 4–5 lin.

*Hab.* Mexico, Cordova (*Sallé*), Jalapa (*Höge*).

The head is very gently concave in front. The thorax has the discoidal impression distinct but not very deep, constricted before the middle, the anterior portion smaller than the posterior; this impression (as well as the lateral one) is filled with dull yellowish pubescence; the posterior ridge is sharp and well defined, curved outwards and joining the margin about the middle. The elytra in a fresh specimen would probably be almost entirely powdered with yellowish pubescence (in most of our specimens the sides are more or less pubescent); there is a spot in the basal impression, one before the middle, a more distinct one considerably behind the middle, and a streak at the apex. The prosternum is closely punctured and pubescent. The metasternum is pubescent except in the middle. The abdomen is broadly pubescent at the sides of the basal and second segments.

This species was received with the manuscript name "*A. squamulatus*, Deyr.," attached. An example in the British Museum is labelled "*A. cælaticollis*, Laf."

### 29. **Agrilus laticaudatus.** (Tab. V. figg. 9, 9 *a*).

Præcedenti affinis et similis. Latior, depressus; elytrorum apice latiore.

Long. 5 lin.

*Hab.* Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

This species closely resembles *A. squamulatus*, but is rather broader and a little more depressed. The elytra are much more dilated at the apex, finely denticulate and with no distinctly larger tooth, but with a very small sinuosity at a little distance from the suture (fig. 9 *a*).

### 30. **Agrilus scabiosus.**

*Agrilus scabiosus*, Thomson, Typi Bupr. p. 88[1].

*Hab.* Mexico[1], Cordova (*Sallé*); Guatemala, San Gerónimo (*Champion*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This species varies in length from $5\frac{1}{2}$ to $6\frac{1}{2}$ lines. Thomson gives the colour as purple; this, however, is not the most usual colour, the disc of the thorax and portions of the elytra being generally of a dark green. Two examples before me have the apex of the elytra tinted with coppery. The front of the head is coppery-red, and there is a small yellowish-white pubescent spot above the clypeus. The sides of the prosternum and metasternum are clothed with very fine pale grey pubescence, and there is a somewhat large triangular spot of the same colour at the side of third abdominal segment.

### 31. **Agrilus chlorocephalus.** (Tab. IV. figg. 17, 17 *a*, *b*.)

Elongatus, angustus, æruginoso-æneus, nitidus; capite antice læte purpureo, clypeo viridi; thoracis disco sparsim punctulato, basi foveolato; elytris subcostatis, regione suturali creberrime subtiliter punctulato, subcosta in medio parcius subtilius punctulata, apice ipso parum dilatato, recte truncato, denticulato, angulo externo dentiformi; metasterni lateribus fulvo-maculatis.

Long. 6 lin.

*Hab.* MEXICO, Cordova (*Sallé*).

The front of the head is of a beautiful purple, the purple limited above by an opaque black velvety spot; rather deeply longitudinally impressed above the clypeus, with a spot of white pubescence in the middle. The thorax has in certain lights a distinct purple shade at the sides; the front part of the disc is convex, with a very slight longitudinal impression; the base is somewhat impressed, and has a rather larger longitudinal median impression; the punctures are distinctly separated from each other; there is an oblique channel on each side (bounded on its outer side by the usual carina), with a small spot of white pubescence at its anterior extremity. The elytra are densely and finely punctured in the sutural area; the rest of the surface is much less closely punctured, the punctures being distinctly separated from each other; there is some very fine inconspicuous pale pubescence on the sutural area, interrupted in the middle by an oblong black spot, and nearer the base there is a trace of a similar (but shorter) spot; the apex is purple on the outer side. The basal segment of the abdomen is slightly visible at the sides of the elytra, the visible part being clothed with fulvous-yellow pile. A spot at the posterior angle of the metasternum, the metathoracic episterna, and the posterior coxæ are fulvous-yellow. The legs are somewhat coppery, with the anterior surface of the front legs green.

### 32. **Agrilus lentulus.** (Tab. V. fig. 12.)

Præcedenti similis, differt thorace fortius punctato; elytris ad apicem intus oblique truncatis, denticulatis, angulo externo vix dentiformi.

Long. 6 lin.

*Hab.* MEXICO, Cordova (*Sallé*).

This insect differs from *A. chlorocephalus* in having the front of the head blue-green. The thorax is obscure purple, with a green (coppery-bordered) line on each side of the

basal impression ; the surface is rugulose at the base. The punctuation of the metasternum and abdomen is rather stronger. The most important difference, however, is in the apex of the elytra, which is oblique on the inner side, with about six or seven small teeth ; the outer angle is not produced into a strong tooth (fig. 12).

### 33. **Agrilus apicalis.**

Angustus, æneus, nitidus ; capite antice longitudinaliter canaliculato, viridi-æneo purpureo-tincto ; thorace convexo, cupreo-vario, medio profunde canaliculato, crebre fortiter punctato et transversim subruguloso, macula laterali sordide alba ornato ; elytris viridi-æneis (ad apicem purpureis), crebre punctatis.
Long. 5 lin.

*Hab.* Mexico, Playa Vicente (*Sallé*) ; Guatemala, Panzos in Vera Paz (*Conradt*).

The head is finely and not very closely punctured on the top ; the face deeply longitudinally channelled ; the upper part impressed and with a brown velvety spot in the middle ; in the lower part of the channel there is an elongate yellowish spot ; the space between the channel and the eye is very convex and shining, and not very closely punctured. The thoráx is strongly and rather closely punctured ; the discoidal impression is deep, narrowed in front, dull brown in the middle ; the posterior ridge is well marked and sharp, curved outwards, and joins the margin at about the middle ; there is a spot of whitish pubescence in the lateral impression. The elytra have the subcosta well marked ; the sutural area is closely and finely but distinctly punctured ; the rest of the surface is rather more strongly punctured, the punctures distinctly separated from each other ; each elytron has about six acute teeth at the apex. The prosternal process is rugosely punctured and pubescent, slightly dilated behind the coxæ. The metasternum is densely and finely punctured in the middle and at the sides, dull ; the rest of the surface is shining and strongly punctured, the punctures not very close together. The metathoracic episterna are densely and finely punctured, clothed with deep yellow pubescence. The abdomen is shining, finely and not very closely punctured ; the basal segment more coarsely punctured at the sides, and with a stripe of dense and fine punctuation on each side at some distance from the middle, united to the lateral margin posteriorly by a narrow line of similar punctuation.

The specimen from Panzos differs from the type in having the prosternum and middle of the metasternum shining, without pubescence, strongly punctured, the punctures not generally crowded together. It is no doubt the female of the same species.

*A. apicalis* differs from *A. lentulus* in having the thorax sulcate in the middle.

### 34. **Agrilus dentifer.** (Tab. V. figg. 13, 13 *a*, *b*.)

Angustus, nitidus, subtus æneus, supra viridi-æneus, capite elytrorumque apice purpureo-cyaneis ; thorace tenuiter punctulato, disco bi-impresso ; elytris obsolete griseo-vittatis, singulo apice truncato, angulo externo in spinam acutam producto.
Long. $4\frac{3}{4}$ lin.

*Hab.* Mexico (*Brit. Mus.*).

The head is dark blue, verging into purple in front; the forehead is rather flattened and with a triangular velvety spot; the face has a deep channel, which has a white spot just above the clypeus. The thorax has two impressions on the disc, the anterior one small and shallow, the posterior one rather deeper and larger; the punctuation is very fine, the punctures not close together; the posterior ridge is rather sharp and distinct—after leaving the base it is nearly straight, directed obliquely to the side, which it joins considerably beyond the middle (fig. 13 *a*). The elytra have the subcosta well marked; the sutural area is closely and finely punctured, with an obscure elongate greyish pubescent spot before the middle, and a long stripe extending from just behind the middle to the apex (fig. 13 *b*); the subcosta is sparingly, the sides more closely punctured; the purple colour at the apex does not quite reach the suture. The sides of the metasternum, the metathoracic epimera, and the posterior coxæ are covered with deep yellow pubescence.

### 35. **Agrilus angustus.**

*Stenogaster angustus*, Chevr. Col. Mex. Cent. ii. fasc. 6. no. 137 (1835) [1].
*Agrilus propinquus*, Chevr. Silbermann's Rev. Ent. v. p. 95 (1837) [2].
*Agrilus multinotatus*, Lap. & Gory, Mon. ii. p. 62, t. 14. f. 81 (1841) [3].

*Hab.* Mexico [2], Cordova, Orizaba, Playa Vicente (*Sallé*), Vera Cruz [3], Alvarado [1]; Guatemala, Chacoj in Vera Paz (*Champion*).

After a careful comparison of the type-specimens of *A. angustus* and *A. propinquus*, now in the British-Museum collection, I have come to the conclusion that they are the sexes of one and the same species. *A. angustus* is smaller and narrower than *A. propinquus*, and has the front of the head flatter, more distinctly punctured, and brassy in colour.

### 36. **Agrilus strigifrons.** (Tab. IV. figg. 19, 19 *a–c*.)

Angustus, nitidus, virescenti-cyaneus, supra virescens; capite antice sat profunde canaliculato, vertice strigoso; thorace brevi, transversim striolato, disco bi-impresso; elytris griseo-maculatis, ad apicem purpureis, spinulosis.
Long. 5 lin.

*Hab.* Mexico, Tuxtla (*Sallé*).

The head has the channel in front deep and occupying about one third the width between the eyes—it is continued posteriorly by an impressed line; the surface on each side of the channel has numerous distinct punctures; the upper part of the forehead and the vertex are marked with closely placed, curved, strongly marked striolæ. The thorax has the discoidal impressions well marked—the anterior one is somewhat triangular in outline, the posterior one oval; the posterior ridge is distinct, curved outwards and downwards to the lateral margin. The elytra have the subcosta well marked, but obtuse; the surface in the sutural area is densely and finely punctured,

the subcosta is comparatively smooth, the sides are closely and more strongly punctured; each elytron has an elongate inconspicuous grey pubescent spot just before the middle, another behind the middle, and a third near the apex, and there is also a very small spot at the side behind the middle. The prosternal process is broad and flat, shining, with numerous rather strong punctures. The metasternum has a deeply-impressed median line. The abdomen is dark steel-blue, with the basal segment æneous in the middle; the punctuation is delicate and not very close.

37. **Agrilus manatus.** (Tab. V. figg. 14, 14 *a–c.*)

Supra æneo-viridis, subtus æneus, nitidus, capite, vertice thoracisque disco olivaceis; capite creberrime sat fortiter punctato; thorace crebre evidenter punctato, disco sat profunde bifoveato; elytris creberrime punctatis (costa fere lævi), singulo apice denticulato et dente acuto armato.

Long. $6\frac{1}{3}$ lin.

*Hab.* Mexico (*Brit. Mus.*).

The head is brassy-green in front, closely and rather strongly punctured, with a not very well-defined impression above the clypeus. The antennæ are very long (fig. 14 *b*). The thorax has the punctuation rather strong, close, often subconfluent transversely; the impressions on the disc are rather deep, transversely ovate; the posterior ridge is well marked, turned down to meet the margin rather before the middle (fig. 14 *a*). The elytra have the subcosta well marked, nearly smooth, and its limits well defined by the punctuation of the rest of the surface; the punctuation in the sutural area is close and fine, at the sides it is a little less close; the apex of each elytron is somewhat expanded, finely denticulate, with a larger central tooth which is coppery. The prosternal process is moderately strongly and somewhat closely punctured. The metasternum is very distinctly, moderately strongly, and rather thickly punctured, but the punctures are well separated from each other. The metathoracic episterna are thickly and very finely punctured, shining on the inner side, clothed with yellow pubescence on the outer side. The abdomen is finely but distinctly punctured, the punctures moderately close together; each segment has at the side a not very distinct triangular spot of fine pale golden-grey pubescence; the lateral carina of the basal segment alters its direction posteriorly (fig. 14 *c*).

38. **Agrilus vittulus.** (Tab. IV. figg. 18, 18 *a*, *b*.)

Brunneo-æneus; thoracis disco foveis duabus profundis notato, sulco laterali flavo-piloso; elytris maculis sex vittaque suturali flavis, apice purpureo.

Long. $4–4\frac{3}{4}$ lin.

*Hab.* Mexico, Cordova, Cerro de Plumas (*Höge*).

The punctuation of this insect does not present anything unusual: it is moderately strong throughout, more dense and fine on the sutural area of the elytra than at their sides. The head is much flattened in front, with a small fovea on the vertex and a very small one on each side, and a shallow one above the clypeus; the male has the face

bluish-green, and the impressions are not so distinct as in the female. The thorax is not much broader in front than behind; the two, rather deep, discoidal impressions are not completely separated and form a figure of 8; the posterior ridge is well defined and smooth, somewhat swollen anteriorly. The elytra are a little more olive-green than the rest of the surface; the purple colour is confined to the extreme apex in the male, but extends some distance along the sides in the female; there is a spot of yellowish pubescence in a deep round impression at the base just within the shoulder, a slightly elongate one near the suture before the middle, and a very small one near the side, scarcely behind the middle; and the apical third of the sutural impression is clothed with pale yellow pubescence. The abdomen has a spot of yellowish pubescence on the upperside on the margin of the basal segment (visible above, particularly in the female), and similar elongate spots on the third, fourth, and fifth segments. The prosternal chin-piece is distinctly emarginate. The sides of the sterna, the posterior coxæ, and the outer half of the metathoracic episterna are clothed with fine yellowish-grey pubescence.

The pubescence is generally paler (almost white) in the male. The prosternum in the male is densely punctured and finely pubescent; in the female it is more coarsely punctured, the punctures more separate from each other, and there is no pubescence.

### 39. **Agrilus socialis.** (Tab. IV. figg. 20, 20 *a*, *b*.)

Supra æneo-viridis, subtus æneus, nitidus; capite cuprascente, creberrime punctato, longitudinaliter impresso; thorace tenuiter punctulato, transversim leviter bi-impresso; elytris crebre punctatis, maculis parvis aureo-flavis ornatis, apice serratis.

Long. $6\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

The head has the punctuation rather strong, the punctures close together on the face, slightly separated on the vertex; the impression in front is oblong-ovate, moderately deep but not very well limited. The thorax is polished, the punctuation very fine and indistinct on the disc, rather more distinct towards the sides; the disc is transversely impressed in front and behind; the posterior ridge is curved, thickened at the base; there are slight coppery shades in some parts. The elytra have the subcosta well marked; the sutural area is densely and rather roughly punctured, the subcosta is nearly smooth, the surface near the shoulder and immediately outside the subcosta finely and not very closely punctured, the punctuation becoming closer and stronger at the sides and apex; each elytron has a very small golden spot just before the middle (close to the suture), a rather larger one considerably behind the middle, and a small one close to the apex. The prosternal process is shining, with some rather strong punctures which are not very close together. The metathoracic episterna are rather closely and finely punctured. The abdomen is very finely punctured, the punctures not very close together.

### 40. **Agrilus acuductus.** (Tab. IV. figg. 15, 15 *a*, *b*.)

Viridi-æneo-metallicus, sat nitidus; thorace crebre sat fortiter punctato, transverse subruguloso, disco antice et postice levissime foveolato, lateribus impressis subtilissime rugulosis, costula ad angulos posticos nitida; elytris post medium attenuatis, ad suturam late impressis, creberrime subtilius punctatis et transverse subrugulosis, ad apicem cupreis, spinosis.

Long. 5–6 lin.

*Hab.* Guatemala, Capetillo (*Champion*).

The head has the punctuation strong; the punctures on the vertex rather close together, those on the face crowded; there is a longitudinal impressed line on the vertex, continued down the face to a little above the clypeus; on the middle of the face there are two very slightly raised ovate spots. The face in some of the specimens is green, in others it is æneous, with the clypeus coppery; this is no doubt a sexual character. The thorax has the punctuation rather strong, the punctures partially confluent transversely, the interstices forming transverse and undulating rugæ. The elytra have the punctuation moderately fine and very close, and in some aspects the surface appears to be finely rugulose; the subcosta is well marked; there are two very small spines at the sutural apical angle, a longer one beyond this, and a very small one at the outer angle. The abdomen has the sides not (or scarcely) visible above at the sides of the elytra.

### 41. **Agrilus denticulatus.** (Tab. V. figg. 16, 16 *a*.)

Viridi-æneus, subtus æneus, nitidus; thorace parum convexo, sat crebre punctato, basi medio fovea leviter impressa; elytris crebre punctatis, ad apicem acuminatis, acute dentatis.

Long. $5\frac{1}{4}$–$6\frac{1}{4}$ lin.

*Hab.* Mexico, Cordova (*Sallé*); Guatemala, Capetillo (*Champion*).

The head is rather flat in front, closely rugose and green in the male, coppery and irregularly punctured in the female. The thorax is moderately strongly punctured, but the punctures are not very clearly defined, though generally distinctly separated from one another; the fovea in the middle of the base is small and shallow; the posterior ridge is rather thick at its base, fine anteriorly, directed inwards at first and then directed forwards and very slightly outwards. The elytra have the subcosta well marked but much arched—it is sparingly punctured, the punctures closer together towards the sides; the sutural area is moderately closely and strongly punctured; each elytron has about seven acute teeth at the apex, the middle one being a little larger than the others (fig. 16 *a*). The prosternum in the male is densely and finely punctured; in the female it is shining and the punctures are well separated from each other. The metasternum in the male is closely and very finely punctured in the middle; in the female the punctures are very fine and well separated from one another. The metathoracic episterna are shining and finely punctured on the inner side, clothed with yellowish pubescence on the outer side. The abdomen is finely and not very closely punctured; the lateral carina of the basal segment is rectilinear posteriorly (fig. 16).

### 42. **Agrilus nitidicollis.** (Tab. V. figg. 15, 15 *a*.)

Elongatus, nitidus, æneus, cuprascens; thorace sat lato, sparsim punctato, lateribus impressis pube flava indutis; elytris æruginosis, sparsim punctatis, ad apicem dilatatis divergentibus, vitta suturali ænea (post medium interrupta), confertim punctulata, flavo-pubescente ornatis; pedibus abdomineque læte cupreis, hoc ad latera purpurascente, maculis albis ornato.

Long. 7 lin.

*Hab.* GUATEMALA, Coban in Vera Paz (*Conradt*).

The head has an impressed median line, and is widely impressed in front, with a transverse impression on each side of the face about the middle; the front is almost smooth, the top is finely and sparingly punctured. The thorax is rather broad, shining, sparingly punctured in the female (transversely striolate in the male), with a slight median impressed line; the sides are somewhat angular about the middle; the posterior ridge turns outwards and downwards, and joins the margin just beyond the lateral angulation. The elytra are brownish- or greenish-bronze, with the apex obscure purple; the subcosta is well marked at the sides of the sutural stripe; the apices are divergent, somewhat dilated, obliquely and arcuately rounded on the inner side and finely denticulate. The prosternal chin-piece is scarcely emarginate. The prosternum is rather strongly and moderately closely punctured; the intercoxal process nearly parallel, with smooth, slightly incrassate margins, suddenly very obliquely narrowed at the apex, leaving a central process at a slightly lower level. The episterna are finely and moderately closely punctured, without pubescence. The abdomen is delicately punctured, coppery, verging into purple-red at the sides, with a small white spot above the basal segment and three oblique white stripes at the sides of the three terminal segments; the lateral carina of the basal segment is deeply excised at the part occupied by the white spot (fig. 15 *a*).

### 43. **Agrilus observans.** (Tab. V. figg. 17, 17 *a*.)

Æneus, sat nitidus; capitis vertice brunneo, thorace cyanescente; elytris cupreo-purpurascentibus, ad apicem utrinque extus emarginatis.

Long. 2 lin.

*Hab.* PANAMA, Bugaba (*Champion*).

This very distinct species may be recognized by the apex of the elytra being cut out on each side, leaving the central part angularly produced and finely serrate. The head is rather flat in front; the lower part brassy and transversely rugose, the upper part brown; the punctures rather strong but distinct from each other; the top obscure brownish, indistinctly punctured. The thorax is marked with strongly impressed curved striolæ; there is an almost imperceptible longitudinal impressed median line; the posterior ridge is fine, close to the margin, curved. The elytra are moderately strongly but not very closely undulate-asperate; the apex of each is excised exteriorly (fig. 17 *a*); the subcosta is very slightly indicated. The prosternal chin-piece is arcuate.

The prosternum is moderately closely punctured, the intercoxal process sparsely pubescent, slightly convex in the middle, not distinctly margined; the apex very obtusely angular, almost truncate. The abdomen is not very closely punctured, the intercoxal process acutangular.

### 44. **Agrilus bellus.** (Tab. V. figg. 18, 18 *a–c*.)

Parum nitidus; capite cupreo, antice aurato, creberrime sat rugoso-punctato; thorace obscure purpureo, transversim irregulariter strigoso et ruguloso, medio leviter canaliculato, lateribus maculis duabus aureo-pubescentibus ornatis; elytris olivaceo-viridis, basi apiceque cuprascentibus, maculis nonnullis aureo-pubescentibus ornatis, creberrime punctatis, lateribus ante medium rugosis, apice denticulato et spina acuta armato.

Long. $3\frac{3}{4}$ lin.

*Hab.* Panama, Bugaba 800 to 1500 feet (*Champion*).

The head has a very faint impressed line down the front, terminating above the clypeus in a very slight round impression; the vertex is irregularly striolate and punctured, the intervals between the striolæ appearing as rugæ. The thorax has the irregular transverse rugæ rather finer than the striolæ, these latter being finely but not closely punctured; the central channel is shallow, but well marked—it does not extend to the front margin; the posterior ridge is distinct and smooth, rather straight (fig. 18 *a*), and the impression inside of it is filled with golden pubescence, as is also the lateral impression at the anterior angle. The elytra have the following golden-pubescent spots:—one in the basal impression, an elongate one in the sutural area extending to the middle, two elongate dashes near the apex (only slightly separated from each other) in the sutural area, and an elongate spot at the side near the apex; the punctuation is rather close but not crowded, and the punctures are somewhat stelliform; each elytron has a rather strong spine in the middle of the apex (fig. 18 *c*). The prosternum is shining, the punctures fine but distinct, moderately close together; rugose posteriorly. The metathoracic episterna are closely punctured and clothed with golden pubescence on the outer side, less closely punctured and bare on the inner side. The abdomen is finely and not very closely punctured; there is a yellow spot on the upper margin of the basal segment, and a spot at the side of each of the apical three segments below; the lateral carina of the basal segment is nearly rectilinear posteriorly (fig. 18 *b*).

### 45. **Agrilus spinicaudatus.** (Tab. V. figg. 19, 19 *a–c*.)

Elongatus, purpureo-niger, sat nitidus; thorace cyaneo-viridi, striolato et punctulato; elytris tenuiter rugosis, in sutura vitta aureo-pubescente ornatis, singulo ad apicem spina acuta armato et denticulato (fig. 19 *c*); abdomine pedibusque æneis.

Long. 3 lin.

*Hab.* Guatemala, Chacoj in Vera Paz (*Champion*).

The head is very gently convex in front, and nearly smooth, except for some punctures at the base of the antennæ; the top is lightly impressed in front, longitudinally

striolate and finely punctured. The thorax is convex, blue-green, shining, slightly and gradually narrowed at the base; the disc with a feeble impression in front and another at the base; the lateral impression is well marked, with some white pubescence at the anterior angle; the posterior ridge is fine but distinct, close to the margin, nearly straight when viewed from above (fig. 19 *a*, lateral view). The prosternal chin-piece is gently arcuate. The prosternum is closely and finely punctured, flat between the coxæ and finely margined laterally. The abdomen is very finely and not very closely punctured; the lateral carina of the basal segment alters its direction posteriorly (fig. 19 *b*).

### 46. **Agrilus adjunctus.**

Brunneo-cupreus, parum nitidus; thorace transversim ruguloso; elytris confertim sat fortiter asperatis; antennis femoribusque anticis antice æneis.

Long. 4 lin.

*Hab.* Mexico, Jalapa (*Höge*).

This species has the colour and general appearance of the European *A. sinuatus*, but is narrower, more attenuated posteriorly, and the elytra have the subcosta well marked, and have a distinct spine at the apex. The head is somewhat dull, very closely and distinctly punctured; the face is longitudinally impressed in the middle, and has a very slight oblong swelling on each side. The thorax is closely rugulose, and has some coarse punctures at the anterior margin; there is an inconspicuous, narrow, lanceolate impression at the base; the lateral impression is shallow and not well marked; there is some whitish pubescence at the anterior angles; the posterior ridge is fine, smooth, and curved down to meet the margin near the middle—it is somewhat interrupted at the base by the uneven surface. The elytra have the subcosta obtuse but well marked and reaching to the apex. The prosternum is densely rugose. The episterna are clothed with fine pale grey pubescence, and the pubescence extends also on to the sides of the metasternum and base of the metathoracic episterna; the latter are closely punctured and slightly rough posteriorly. The abdomen is finely and not very closely punctured; there is a small spot of pale pubescence in an impression about the middle (somewhat removed from the side); and an elongate spot at the side of the second and third segments.

### 47. **Agrilus gracilipes.**

Obscure aureo-æneus, sat nitidus; thorace transversim strigoso, ad angulos posticos linea elevata recta nitida instructo; elytris rugulosis, apice parum ampliato, denticulato, cupreo-tincto; pedibus gracilibus.

Long. $3\frac{1}{2}$ lin.

*Hab.* Mexico, Oaxaca (*Höge*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

The front of the head in the male is somewhat golden-green, dull, extremely finely

rugulose, with a few minute shining granules; the sculpture of the clypeus is rather coarser; in the female the front is slightly coppery, less dull and with the shining granules more distinct; the top of the head is finely longitudinally strigose. The thorax has the extreme lateral margins coppery; in the middle of the base there is a slight triangular impression; the surface is transversely strigose; the striæ are closer together at the base than in front, where they are curved; the posterior ridge is strongly marked, nearly straight (viewed from above), and terminates abruptly rather before the middle. The elytra have the subcosta distinct to near the apex; the surface is almost uniformly asperate; the sutural impression has some very short inconspicuous golden pubescence; before the middle the pubescence is thicker and forms a not very conspicuous elongate spot. The underside of the insect is clothed with pale grey pubescence, except the abdomen. The prosternum is closely and finely rugulose in the male, rather coarsely rugose and less pubescent in the female. The metathoracic episterna are closely and finely punctured; and pubescent, except the inner border. The abdomen is shining, with the punctuation very fine and not close.

### 48. **Agrilus carinifer.**

Elongatus, brunneo-cupreus, parum nitidus, rugosus; capite antice planato; thorace basi sat angustato; elytris regione suturali æneo suffuso, parce griseo-pubescente, ad apicem parum divergentibus, singulis acuminato-serrulatis. ♂ capite antice femoribusque viridibus.

Long. 4–4$\frac{1}{4}$ lin.

*Hab.* MEXICO, Cordova (*Sallé*), Oaxaca (*Höge*); GUATEMALA, Coban in Vera Paz (*Conradt*).

The head is densely and finely rugose in the male, with numerous shining points; in the female it is more coarsely rugose. The thorax is convex, nearly parallel at the sides, but suddenly narrowed at the base; rugose, with curved rugæ on the disc; there is a very slight impression in the middle of the base; the posterior ridge is very well marked, shining, nearly straight when viewed from above. The elytra are rather strongly rugose, except near the apex where the sculpture is finer, becoming coarse again at the extreme apex; the subcosta is well marked; the sutural region is sparsely pubescent, the basal half suffused with green; the apex is very slightly dilated, each elytron being obliquely truncate on the inner side and on the outer side so that the apex is angular. The prosternal chin-piece is much rounded in front, and, with all the sterna and base of the abdomen, densely and finely punctured and clothed with pale grey pubescence. The inner half of the metathoracic episterna is less densely punctured and less pubescent. The apical portion of the abdomen is shining, very delicately and not closely punctured. The posterior tibiæ are linear, with a very fine even fringe of short hair on the apical half of the upper edge.

### 49. **Agrilus molestus.** (Tab. V. figg. 20, 20 *a–c*.)

Æneus, parum nitidus; capite antice obscure cupreo, rugoso, clypeo macula triangulari flavo-pilosa impresso; thorace irregulariter transversim vermiculato-strigoso, margine antico cupreo, disco bi-impresso, lateribus antice flavo-pubescentibus; elytris sat fortiter rugosis, maculis sex aureo-pubescentibus ornatis, apice acuminato, denticulato.

Long. $3\frac{1}{2}$ lin.

*Hab.* Panama, Tolé (*Champion*).

The front of the head is very slightly convex; the triangular impression above the clypeus extending to about the middle; when viewed from the front a very slight impression may be seen at the upper part of the face, but it is not visible from above. The thorax has the sculpture consisting of numerous short (more or less transverse) curved lines, crossed at intervals by some finer oblique striolæ; of the two impressions on the disc the posterior one is the larger and deeper—in some lights they appear confluent; the posterior ridge is near the side, and it is curved outwards and downwards to meet the margin about the middle (fig. 20 *a*). The elytra have the subcosta very little raised; the pale golden-yellow spots are in the sutural area—the first extends from the base to about one third the length of the elytron, the second is considerably behind the middle, and the third is linear at the apex; the apices are angular (fig. 20 *c*). The metathoracic episterna are closely punctured and pubescent. The sides of the sterna are clothed with pale golden-yellow pubescence, and there is a spot of the same colour on the upper margin of the basal segment of the abdomen, and a spot at the side of the second and of the third segments. The lateral carina of the basal segment of the abdomen is sinuate about the middle (fig. 20 *b*).

### 50. **Agrilus bicarinatus.**

Cuprascens; capite crebre punctato, antice sulcato (♂ viridi); thorace convexo, transversim ruguloso, medio sulcato, angulis posticis carina nitida distincta fere recta instructis; elytris olivaceo-tinctis, maculis sex griseis minus distinctis ornatis; pectore griseo-pubescente; abdominis segmentis secundo tertioque macula flavo-grisea parum distincta ornatis.

Long. 3 lin.

*Hab.* Mexico, Atoyac in Vera Cruz (*H. H. Smith*), Juquila, Oaxaca (*Sallé*); Guatemala, Chacoj and Teleman in Vera Paz, Zapote (*Champion*).

This species much resembles *A. molestus*; but it has the spots on the elytra somewhat differently placed, and is at once distinguished by having the posterior ridge of the thorax directed straight forwards instead of curved outwards. The head is slightly convex in front, rather less so in the male than in the female, strongly and closely punctured in the female, the punctures arranged in curved lines on the vertex; in the male the punctuation of the front is finer, and the surface less shining; at the top of the face there is a somewhat deep impression which is continued down the face as a slight channel. The thorax is somewhat narrowed before the base, the posterior angles slightly diverging; the channel in the middle is well marked and

continuous; the posterior ridge is very distinct—after turning a little from the hind angles it is directed straight forwards, stopping abruptly about the middle of the length of the thorax. The elytra are asperate-punctate, but not so densely as in *A. molestus*; the subcosta is well marked; each elytron has three not very distinct greyish-yellow spots—one at the base, the second elongate, its posterior part at the middle of the elytra, and the third slightly oblique, halfway between the second and the apex; the apex is reddish-coppery and shining (some examples, however, scarcely show this), and its margin is finely denticulate. The prosternal chin-piece is rounded. The prosternum is finely punctured, the punctures not crowded; the intercoxal process is rather flat. The metathoracic episterna have the outer third finely punctured and pubescent, the rest smooth and shining. The abdomen is finely and not very closely punctured.

### 51. **Agrilus subguttatus.**

Æneus, depressus, parum nitidus; capite crebre punctato, antice planato, ♂ viridi; thorace transversim crebre ruguloso, punctulato; elytris æqualiter asperato-punctatis, maculis quatuor parum conspicuis griseis ornatis.

Long. $2\frac{1}{3}$–$2\frac{1}{2}$ lin.

*Hab.* MEXICO, Misantla, Oaxaca (*Höge*), Cordova, Juquila (*Sallé*).

The head in the male is light green in front, dull and extremely finely rugose, as if frosted; in the female the sculpture is coarse, consisting of irregular, curved, and wavy rugæ. The thorax is convex, with no impressions on the disc; the posterior ridge is very distinct, shining, nearly straight. The elytra are rather flat, with the subcosta not very distinct; each elytron has an oblong yellowish-grey pubescent spot just before the middle and an ovate spot a little nearer to the apex than to the first spot, and the apex oblique inside and outside and finely serrate. The prosternal chin-piece is rounded. The prosternum is closely and finely (slightly roughly) punctured, and somewhat pubescent. The metathoracic episterna are finely punctured and pubescent, with the posterior angle smooth and shining. The abdomen is delicately and not very closely punctured.

The male examples have the spot at the middle of the elytra much less distinct than in the female.

### 52. **Agrilus errans.**

Olivaceo-æneus, parum nitidus; capite antice viridi (♂) vel cuprascente (♀), ruguloso et punctato; thorace undatim striolato et punctato; elytris crebre asperatis, maculis duabus pallidis pone medium notatis.

Long. $2\frac{2}{3}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

The front of the head in the male is golden-green, rather flat, densely and extremely finely rugose, with some fine punctures scattered over the surface; in the female it is coppery, and similarly finely rugose, but the surface is marked with undulating

coarsely punctured striolæ. The thorax is marked with closely placed, strongly punctured, wavy impressed lines; the posterior ridge is not very well marked, short, rather straight, directed forwards, and does not join the lateral margin anteriorly. The elytra are reticulate-asperate; the subcosta is distinct but it does not extend to the base or apex, the sutural area being convex at the base and apex; each elytron has a not very distinct spot of silvery-grey pubescence at some distance from the apex (close to the suture), and at the middle a still less distinct spot. The prosternum is finely rugose, sparsely covered with silvery pubescence in the male, almost without pubescence in the female. The metasternum and abdomen are distinctly and not very closely punctured, almost without pubescence.

Specimens from Dueñas in Guatemala, which appear to be referable to this species, vary from $2\frac{1}{6}$ to $2\frac{1}{2}$ lines in length.

### 53. **Agrilus affinis.**

Olivaceo-æneus, parum nitidus; thorace undatim striolato et punctato; elytris crebre asperatis, pube brevi pallida vestitis, macula communi pone medium calva; abdominis segmentis secundo et tertio macula parva alba ornatis.

Long. $2\frac{1}{6}$–$2\frac{3}{4}$ lin.

*Hab.* GUATEMALA, Dueñas (*Champion*).

This species is very close to *A. errans*, and it is only after very careful examination that I venture to separate it; both species were in some cases mounted on the same card. It differs in having the elytra sparsely clothed with very short pale pubescence, leaving an elongate bare spot just behind the middle, common to both elytra; above this spot and below it the pubescence is more dense, and indistinct spots are formed representing those in *A. errans*. The abdomen has a small whitish pubescent spot at the side of the second and third segments, which is not present in *A. errans*. The character, however, which is the most important is the posterior ridge of the thorax, which is well marked (though fine) and directed obliquely inwards, instead of being directed forwards as in *A. errans*.

### 54. **Agrilus pectoralis.**

Æneo-cupreus, sat nitidus; capite antice levissime convexo, subtiliter rugoso, pallide griseo-pubescente; thorace oblique striolato, disco obsolete canaliculato; elytris reticulato-striolatis, maculis sex pallidis ornatis; metasterno lateribus albo-pubescentibus; abdominis segmento basali supra macula laterali alba notato.

Long. $1\frac{2}{3}$–2 lin.

*Hab.* MEXICO, Northern Sonora (*Morrison*).

The head is very gently convex in front and very finely and closely rugose, clothed with silvery-white pubescence, which radiates from a spot situated above the middle; the top is convex, longitudinally striolate, the striolæ punctured, and has a very lightly marked median impressed line. The thorax is convex anteriorly, flatter

posteriorly; narrowed at the base, gently arcuate at the sides anteriorly; the surface is marked with moderately closely placed oblique (gently curved) punctured striolæ; there is a very slightly impressed median line, but it is only visible in some lights; the pubescence is very sparse, except in the lateral impression, where it is more conspicuous; the posterior ridge is short and inconspicuous and does not extend to the margin. The elytra are reticulate-striolate, very slightly asperate at the base; the subcosta is very little raised, obtuse, and sculptured like the rest of the surface; each elytron has three pale yellowish-grey spots—the first in the basal impression, the second elongate, just before the middle, and the third elongate-elliptical, placed at a little distance from the apex. The prosternal process is very closely and finely punctured and pubescent. The metasternum has a broad stripe of white pubescence at the sides. The metathoracic episterna are moderately closely punctured, with some white pubescence on the outer half. The abdomen has a conspicuous elongate white spot on the upper margin of the basal segment; the surface below is distinctly but not very closely punctured, each puncture having a very short pale hair; there is an inconspicuous spot at the side of each of the three terminal segments.

### 55. **Agrilus addendus.**

*Agrilus addendus*, Crotch, Proc. Ac. Phil. 1873, p. 95[1].

*Hab.* North America, Texas (*Belfrage*[1]).—Mexico, Northern Sonora (*Morrison*).

This species resembles *A. detractus*, but the head is longitudinally impressed in front; and the dorsal channel on the thorax is scarcely marked, and the carina is not directed inwards. In the examples in the British Museum, received from Crotch, and in those from Sonora, there is an elongate spot just before the middle of the elytra; the author of the species only mentions[1] the spots at the base and near the apex of the elytra.

### 56. **Agrilus detractus.**

Obscure cupreus, surdus; capite antice pube pallide grisea vestito; thorace subtiliter punctato, transversim tenuiter ruguloso, medio leviter canaliculato, lateribus pube pallide flavo-grisea indutis; elytris subtiliter asperatis, in regione suturali maculis obscuris sordide flavis ornatis.

Long. $2\frac{3}{4}$–3 lin.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*).

The head in the male has the front obscure green, dull, the sculpture excessively fine; in the female it is more coppery, less dull, finely rugose, with a shallow round impression at the upper part. The thorax has the median channel rather narrow, distinct, but not very deep, a little less distinct in the middle; the posterior ridge is straight, well marked, fine, and shining, directed obliquely inwards. The elytra have the close asperate sculpture somewhat fine and even; the subcosta is obtuse, but distinct for the

whole length of the elytra, although rather less distinct posteriorly in the female; each elytron has a spot of dirty yellow pubescence in the basal impression, a short streak at the middle (sometimes broken into two small spots), and a small spot at some distance from the apex. All the underside of the insect is sparingly clothed with short fine pale grey pubescence, which, however, is more dense at the sides of the abdomen, but scarcely forms spots. The prosternum is densely and very finely rugose; finer in the male than in the female. The anterior and intermediate femora are obscure green in the male.

### 57. **Agrilus quadrinotatus.**

*Agrilus quadrinotatus*, Gory, Mon. iv. p. 233, t. 38. f. 224[1].

*Hab.* Mexico[1], Cuernavaca (*Sallé*), Chilpancingo in Guerrero (*Höge*).

### 58. **Agrilus uniformis.**

Obscure viridis, parum nitidus, capite antice planato, læte viridi, elytris olivaceo-viridibus; thorace leviter convexo, transversim confertim tenuiter ruguloso; elytris confertim tenuiter asperatis; pectoris lateribus griseo-pubescentibus.

Long. $2\frac{2}{3}$ lin.

*Hab.* Mexico, Cordova (*Sallé*); Nicaragua, Chontales (*Belt*).

This is a moderately narrow species, gradually attenuated posteriorly. The head is very flat in front and extremely finely granular; the vertex is unusually smooth, with some extremely fine punctures. The thorax is evenly convex, with an indication of a longitudinal median impression, only visible in some lights; the posterior ridge is fine but distinct, shining, directed forwards, very slightly curved. The elytra have the subcosta distinct but obtuse, nearly straight, gradually approaching the suture at the apex; the apex of each elytron is obliquely truncate inside and outside. The prosternal chin-piece is distinctly emarginate. The prosternum is not very closely punctured. The episterna have the outer half clothed with greyish-white pubescence; the inner half is smooth, with some very fine punctures. The abdomen is finely and not very closely punctured, except at the side of the basal segment, where the punctuation is close; there is a sparsely pubescent spot near the side of the basal segment.

The example from Chontales is of a brighter green than those from Cordova.

### 59. **Agrilus hilaris.**

Supra nigro-æneo-virescens, parum nitidus, subtus æneus nitidus; capite antice planato, subsurdo, crebre subtiliter punctulato, æneo-viridi vel cupreo; thorace transversim ruguloso, obsolete punctulato, basi medio leviter impresso; elytris tenuiter asperatis, maculis sex (vel octo) flavo-griseis ornatis, ad apicem attenuatis, serratis.

Long. $2\frac{4}{5}$–3 lin.

*Hab.* Guatemala, Pantaleon 1700 feet (*Champion*), Panzos in Vera Paz (*Conradt*).

This is a very dark-coloured species, appearing almost black in some lights, or bluish-green. The thorax has the posterior ridge very short and not conspicuous; it is directed inwards at first, but turns forwards and outwards anteriorly. Each elytron has an elongate basal impression, which is partly filled with dirty yellow pubescence; there is an elongate pubescent spot just before the middle in a well-marked impression, a lanceolate spot behind the middle, and a narrow line at the apex. The prosternal chin-piece is arcuate. The prosternum is finely punctured and clothed with grey pubescence, transversely impressed below the chin-piece; the intercoxal process is slightly concave, margined laterally. The metathoracic episterna are closely and finely punctured and pubescent, with a very small smooth spot at the posterior angle. The abdomen is finely and not very closely punctured; the basal segment has a well-marked impression at a little distance from the sides filled with white pubescence, and the following segments have each a white spot near the margin. The posterior femora are rather incrassate.

### 60. **Agrilus cerinoguttatus.**

*Agrilus cerinoguttatus,* Chevr. Col. Mex. Cent. ii. fasc. 6, no. 142 (1835)[1].

*Hab.* Mexico [1], Tuxtla (*Sallé*).

### 61. **Agrilus sublateralis.** (Tab. V. figg. 21, 21 *a*, *b*.)

Æneus, nitidus, capitis vertice pronotoque fere nigris, elytris purpureis; capite longitudinaliter sat fortiter impresso, et in medio fovea magna transversa; thorace punctato, medio longitudinaliter fortiter impresso, impressione ante medium paullo angustata, angulis anticis macula pallide flavo-pubescente ornatis; elytris creberrime punctatis, ad apicem angustatis, denticulatis.

Long. 6 lin.

*Hab.* Mexico, Cordova (*Höge*).

The head is closely punctured; the transverse impression in the middle of the front extends nearly from one eye to the other. The thorax has moderately strong, transverse (sometimes elongate) punctures, placed close together in the discoidal impression, more separated on the raised parts, a small spot on each side of the impression in front almost smooth; the posterior ridge is scarcely raised at the base, but becomes more distinct at a short distance from it, curving outwards and downwards anteriorly (fig. 21 *a*). The elytra have the subcosta very obtuse and straight (not sinuous posteriorly as is often the case), with some fine scattered punctures; the punctures on the rest of the surface are rather strong, close together in the sutural area, more separated at the sides, but frequently arranged in short transverse lines. The prosternum is shining, and the punctures very irregular in shape and position. The abdomen is finely punctured, the punctures not very close together; on the basal segment there is (at some distance from the side) a stripe of very pale yellow pubescence, and on the following three segments there are spots similarly placed; the basal segment has at its base an elongate yellow spot on the upper surface. The lateral carina is rectilinear posteriorly (fig. 21 *b*).

## 62. **Agrilus coxalis.**

Æneus, parum nitidus, pronoto cyaneo-æneo, elytris brunneo-æneis postice purpurascentibus; capite antice confertim rugoso-punctato, fronte medio impressa; thorace confertim tenuiter punctato et subruguloso, disco leviter bi-impresso, angulis anticis macula alba ornatis; elytris confertim subasperato-punctatis, maculis sex fere albis ornatis; prosterno crebre rugoso-punctato; abdomine sat crebre punctato, segmentis ad latera supra flavo-maculatis.

Long. $4\frac{1}{2}$–5 lin.

*Hab.* Mexico, Juquila (*Sallé*), Cordova (*Höge*); Guatemala, San Gerónimo, Capetillo (*Champion*).

The head varies very much in colour in the different individuals; it is generally brassy-green or bluish-green in front, much darker on the vertex. The thorax has the discoidal impressions distinct but shallow, subconfluent; the posterior ridge is well marked, smooth, nearly straight, terminating abruptly before the middle of the side. The elytra are flat on the back, the suture not raised except at the apex; the subcosta is not well marked: each elytron has three pale yellow or white pubescent spots—one in the basal fovea, another at the middle, the third between the second and the apex; there is also a little pubescence along the suture at the apex. The mesothoracic epimera, the outer half of the metathoracic episterna, and the posterior coxæ are clothed with yellow pubescence. The abdomen has some extremely short fine pubescence; towards the sides of the second and third segments the pubescence is a little more distinct, but scarcely forms spots. The spots on the upperside of the segments are elongate; that on the basal segment is generally the only one visible from above. The metathoracic episterna are closely punctured.

## 63. **Agrilus robustus.**

Sat brevis, crassus, cupreo-brunneus, supra surdus, subtus nitidus; capite antice subplanato, confertim subtiliter rugoso-punctato, linea mediana leviter impresso; thorace transversim creberrime ruguloso et punctulato, medio sulcato; elytris confertim asperatis, guttis quatuor parvis inconspicuis notatis; femoribus sat incrassatis; corpore subtus sparsim griseo-pubescente.

Long. 3–$3\frac{1}{2}$ lin.

*Hab.* Nicaragua, Chontales (*Belt*).

The thorax has the median channel rather narrow, moderately deep, not quite reaching the base or anterior margin; the posterior ridge is well marked, straight, somewhat removed from the margin, directed straight forwards. The elytra have the subcosta fairly well marked; each elytron has traces of two small spots, one at about a third from the base, scarcely noticeable, the other rather less than a third from the apex. The prosternal chin-piece is rounded in front, with an almost imperceptible sinuosity in the middle. The prosternum is densely punctured. The metathoracic episterna are not very densely punctured, sparsely pubescent. The abdomen is not very densely punctured, except at the sides of the basal segment. The legs have the femora rather unusually thick, especially the anterior.

### 64. **Agrilus scabrosus.**

Sat crassus, æneus, parum nitidus; capite creberrime punctato, medio canaliculato; thorace transversim subquadrato, transversim fortiter ruguloso, medio leviter canaliculato; elytris confertim rugosis, brevissime parce sordide flavo-pubescentibus; abdominis segmento basali carina laterali medio angulata, segmento secundo macula sordide flava ornato.

Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Cuernavaca (*Sallé*).

This species somewhat resembles *A. perlucidus*, but is at once distinguished by the angulated lateral carina of the basal segment of the abdomen &c. The thorax is rather straight at the sides, evenly convex, narrowly impressed laterally, with no posterior ridge or swelling; the transverse or oblique rugæ are strong and close; the median channel is narrow, distinct but not deep; the surface is slightly pubescent. The elytra have the subcosta very indistinct, except about the middle; the pubescence is a little congested near the suture behind the middle, but scarcely forms a spot; the apex of each is narrow and rounded, finely serrulate. The prosternal chin-piece is nearly straight in front. The prosternum is rugose, slightly pubescent; the intercoxal process with its margins slightly raised, the apex a trifle widened and truncate. The episterna are closely punctured, with a little pubescence on the outer half. The abdomen is finely punctured; the lateral carina of the basal segment strongly angulated about the middle, pubescent above; the second segment with a distinct whitish pubescent spot at the side.

### 65. **Agrilus major.**

Crassus, subparallelus, supra subdepressus, cupreus, subtus æneus; thorace medio sulcato, crebre ruguloso, lateribus viridi-auratis; elytris rugosis, maculis rotundatis quatuor ochraceis notatis, apice serrulato.

Long. 5–$5\frac{2}{3}$ lin.

*Hab.* Mexico, Tacambaro (*Höge*), Amula in Guerrero 6000 feet (*H. H. Smith*).

The head is slightly flattened in front, rugulose; with a longitudinal median impression, which is rather widened on the vertex. The thorax is coarsely rugulose, the rugæ curved; the median impression is moderately deep, subparallel; the posterior ridge is represented by a narrow swelling; the sides are greatly arcuate, slightly sinuate before the hind angles; the lateral impression is slight. The elytra are rugose; the subcosta is scarcely indicated; each has a round yellow spot just before the middle, and another at one third from the apex; the apex is oblique on the outside and finely serrulate. The prosternal chin-piece is very slightly arcuate. The prosternum (and metasternum) is closely and coarsely rugose-punctate; the intercoxal process is broad and parallel, nearly truncate at the apex, a little advanced in the middle; sparsely pubescent. The episterna are coarsely and closely punctured, shining, with a little pubescence on the outer margin. The abdomen is rather strongly punctured; the lateral carina of the basal segment is distinctly angular about the middle, with a pubescent spot above. The whole of the

underside is slightly pubescent, and at the sides of the abdominal segments the pubescence is somewhat more dense and forms vague spots.

### 66. **Agrilus bi-impressus.**

Æneus, nitidus, subtus nigro-æneus; capite convexo, sat lato, vertice striolato, antice fortiter punctato, inæquali (sicut granuloso), foveola perparva medio impresso; thorace basi paullo angustato, crebre punctato, haud ruguloso, disco bi-impresso; elytris crebre tenuiter asperatis, pube grisea brevissima vestitis.
Long. 2 lin.

*Hab.* Mexico, Acapulco and Iguala in Guerrero (*Höge*).

The thorax has the two impressions on the disc very well marked, the front one very small, the posterior one larger and round; the posterior ridge is very distinct, directed obliquely inwards. The elytra have the subcosta fairly well marked, but very obtuse; the sutural region has indications of two very slight impressions, one before, the other behind the middle. The prosternal chin-piece is slightly but distinctly emarginate. The prosternum is finely punctured, shining, the punctures not crowded together. The metathoracic episterna are sparsely clothed with white pubescence. The abdomen is moderately strongly punctured, the punctures not crowded, generally united transversely by fine striolæ.

One example has the head obscure green in front.

### 67. **Agrilus mexicanus.**

*Agrilus mexicanus*, Gory, Mon. iv. p. 267, t. 45. f. 262[1]. 1/2 l.

*Hab.* Mexico[1].

### 68. **Agrilus basilaris.**

Subtus æneus, nitidus, supra subsurdus; capite versicolore; thorace transversim ruguloso, antice cupreo-purpurascente, postice ænescente cupreo-vario; elytris æneo-prasinis, basi cupreis, crebre undatim asperatis, vitta suturali pallide luteo-pubescente, apice denticulato.
Long. $2\frac{1}{4}$–$3\frac{1}{3}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

The head is densely and extremely finely rugose, and with some rather strong and moderately close punctuation; the upper part of the face has some longitudinal lines; the top of the head is dark purple; the upper part of the face is dark steel-blue, below which there is a transverse coppery-red line; the clypeus is golden-green; there is an impressed line down the middle of the face. The thorax is dark purple (or dark green) in front, coppery-red at the base; the surface is covered with curved, undulating, impressed, punctured lines; the posterior ridge is well marked and sharp, nearly straight, and not curved down anteriorly to meet the margin. The elytra have the subcosta moderately well marked; the surface is closely asperate, caused by the transverse dentate impressed striolæ. The prosternum is closely punctured, slightly pubescent. The metasternum

is not very closely punctured. The episterna are finely and not very closely punctured on the inner half, clothed with whitish pubescence on the outer half. The abdomen is finely and not very closely punctured; with a patch of dense fine punctuation at the side of the basal segment.

### 69. **Agrilus femoralis.** (Tab. V. figg. 22, 22 *a*, *b*.)

Elongatus, subparallelus, supra purpureo-niger, parum nitidus, subtus cupreo-æneus, nitidus, pube alba ornatus; capite antice æneo-viridi, subtiliter punctulato, longitudinaliter sat late sulcato, supra clypeum macula pallide flava ornato; thorace elongato, convexo, crebre punctulato, transversim ruguloso, medio sat profunde sulcato, lateribus linea flava ornatis; elytris postice parum angustatis, creberrime subtiliter punctatis, vitta suturali (post medium interrupta) flavo-pubescente; antennis longis; femoribus posticis incrassatis, tibiis curvatis, tarsis longissimis.

Long. $3\frac{3}{4}$ lin.

*Hab.* GUATEMALA, Panzos in Vera Paz (*Champion*).

The head has the impression on the front of the forehead deep, the space on each side of it raised and prominent when viewed from above; the antennæ are long (fig. 22 *a*). The thorax has the longitudinal median channel extending from the base almost to the front margin; the posterior ridge is very indistinct and close to the margin (fig. 22 *b*). The elytra have the subcosta distinct at the middle but obliterated posteriorly; the sutural stripe of yellow pubescence is indistinct behind the middle, very narrow at the apex; the apex is obliquely rounded off on the outside, slightly emarginate at the sutural angle, the margins almost smooth. The prosternal chin-piece is gently emarginate. The prosternum is densely and finely punctured and clothed with white pubescence; the intercoxal process is flat, margined laterally. The metathoracic episterna are finely punctured, pubescent on the outer half. The posterior coxæ are clothed with yellow pubescence. The abdomen has the basal segment longitudinally impressed in the middle, the impression filled with white pubescence, and near each side there is transverse impression also filled with white; the second segment has a round white spot near the side; the upper margins of the segments are clothed with pale yellow pubescence, except the apical half of the basal segment. The posterior tibiæ are gently curved, compressed towards the apex, the inner side gently emarginate for three quarters the length.

### 70. **Agrilus antennatus.**

Elongatus, parum nitidus; supra purpureo-niger, ænescens, subtus æneus, nitidus; capite antice viridis, sat planato, creberrime rugoso, vertice foveola elongata impresso; antennis longis; thorace elongato, crebre obsolete punctulato et ruguloso, disco antice transversim leviter impresso, postice leviter foveolato, lateribus pube flava ornatis; elytris creberrime subasperato-punctulatis, vitta suturali (post medium interrupta) pallide flava.

Long. 3 lin.

*Hab.* MEXICO, Atoyac in Vera Cruz (*H. H. Smith*, April 1888).

The head viewed from above is gently arched in front, finely longitudinally striolate;

the antennæ are very long and slender, even more so than in *A. femoralis*. The thorax has the posterior ridge very fine but distinct, directed forwards. The elytra have the subcosta fairly well marked and continued nearly to the apex; the sutural stripe (completely interrupted behind the middle) is of nearly equal width throughout; the apex of each elytron is rounded and finely serrate. The prosternal chin-piece is gently emarginate. The prosternum is densely and finely punctured and pubescent, but the pubescence being rather dark and very fine it is not very conspicuous; the intercoxal process is flat, with a very faintly raised median line. The abdomen is finely and not very closely punctured.

### 71. **Agrilus sobrinus.**

Elongatus, angustus; supra olivaceo-viridis, parum nitidus, subtus æneus, nitidus; capite antice sat planato, viridi-aurato, crebre sat fortiter rugoso; antennis longis; thorace hic et illic purpureo-tincto, lateribus aureo-marginatis, disco medio linea impresso; elytris creberrime subasperato-punctatis, vitta suturali parum conspicua pallide flava; femoribus posticis paullo incrassatis, tibiis sat gracilibus, tarsis longissimis.

Long. 3 lin.

*Hab.* Mexico, Atoyac in Vera Cruz (*H. H. Smith*, April 1888).

The head is longitudinally striolate at the vertex; when viewed from above it is convex in front, with a slight median impressed line; the antennæ are green at the base, nearly black at the apex, not quite so long as in *A. femoralis*. The thorax is transversely finely rugulose; the sides are golden, with a line of coppery above the golden; the median line is narrow, almost interrupted in the middle; the posterior ridge is well marked, shining, straight, and directed obliquely inwards. The elytra are scarcely widened behind the middle; the subcosta is fairly well marked, but does not reach the apex; the apex of each elytron is obliquely truncate inside and outside, finely serrate. The prosternal chin-piece is gently emarginate in the middle. The prosternum is closely and finely punctured, with scarcely any pubescence; the intercoxal process has its margins raised. The metathoracic episterna are finely punctured, slightly pubescent. The abdomen is finely and not very closely punctured; the basal segment is densely punctured at the sides.

### 72. **Agrilus cephalotes.** (Tab. V. figg. 23, 23 *a*, *b*.)

Elongatus, æneus, nitidus; capite antice virescente, creberrime sat fortiter punctato; thorace convexo, postice paullo angustato, crebre fortiter punctato, transversim subruguloso, disco antice levissime transversim impresso, medio subcanaliculato; elytris crebre asperatis, postice nigrescentibus, attenuatis, vitta suturali griseo-pubescente, apice denticulato.

Long. 3 lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

This species has the head rather wider than is usual; the face is rather flat, the lower part covered with very short silvery-grey pubescence. The thorax is coarsely

punctured, the intervals appearing like rugæ in some lights; the median channel is tolerably well marked, but it does not reach the front margin; the posterior ridge is close to the margin, scarcely visible from above—when seen sideways, it is distinct, curved down to the margin about the middle (fig. 23 *a*). The elytra have the subcosta fairly well marked; the sutural stripe is not conspicuous, but it extends from the base to the apex; the apex is denticulate, one tooth being a little longer than the others. The whole of the sternum is sparsely clothed with pale grey pubescence. The prosternal chin-piece is short, nearly straight. The prosternum is closely and finely punctured; the intercoxal process is nearly flat, with smooth lateral margins, very obtusely angular at the apex. The episterna are finely punctured and pubescent. The abdomen is finely and not very closely punctured; the intercoxal process obtusely angular; the basal segment convex, with a stripe of pubescence at some distance from the side; the second and third segments with a slight spot at the side; the lateral carina is slightly angulated behind the middle (fig. 23 *b*). The basal joint of the posterior tarsi is not very long.

### 73. **Agrilus temeratus.** (Tab. V. figg. 24, 24 *a*, *b*.)

Niger, nitidus; capite convexo, ruguloso, antice fovea parva impresso; thorace convexo, ruguloso, medio sulcato, angulis posticis carina obliqua valida instructis; elytris rugosis, sub humeris compressis, maculis æneis griseo-pubescentibus ornatis, apice denticulato.

Long. $2\frac{1}{2}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

The head has a small impression just above the clypeus. The thorax is rather long, advanced in the middle of the front margin, very gently arcuate at the sides, almost straight behind; convex, impressed at the base; rugulose, the rugæ close and various in their directions; the median channel is deep and narrow; the posterior ridge is shining and sharply defined, straight, directed obliquely inwards to a little beyond the middle of the length of the thorax (fig. 24 *a*). The elytra have no defined subcosta, but are rather impressed about the middle; each elytron has a quadrate æneous spot near the suture at one quarter from the base, an oblong one about the middle, and an oblique, rather broad fascia at a short distance from the apex, all clothed with silvery pubescence; the apex is obliquely truncate inside and outside, and finely but distinctly denticulate. The prosternal chin-piece is almost imperceptibly emarginate. The prosternum is coriaceous, with numerous transverse punctures; the intercoxal process is gradually acuminate posteriorly. The episterna are slightly pubescent on the outer margin; shining on the inner part, with rather large vague punctures. There is some pure white pubescence at the sides of the metasternum, a spot above the margin of the basal segment of the abdomen, and a spot at the side of the second segment. The lateral carina of the basal segment is distinctly curved about the middle (fig. 24 *b*).

### 74. **Agrilus lætulus.** (Tab. V. figg. 25, 25 *a–d*.)

Cyaneo-viridis, nitidus; thorace tenuiter striolato, medio bi-impresso; elytris crebre rugosis, vitta brevi ante medium (extus ad apicem macula parva aucta) plagaque ante apicem transversa griseis ornatis, apice obtuse rotundato et denticulato.
Long. 3 lin.

*Hab.* GUATEMALA, San Juan in Vera Paz (*Champion*).

The head is rather flat in front, closely and somewhat strongly punctured, the punctures confluent transversely at the lower part; the top of the head is longitudinally striolate. The thorax has two discoidal impressions, one anterior, the other posterior, both moderately deep and wide; the posterior ridge is distinct near the margin, slightly thickened anteriorly, curved downwards, but not reaching the margin (fig. 25 *a*). The elytra have the subcosta very distinct (but not at the base, where the surface is convex), parallel with the suture to near the apex, then turned towards the suture; the apex of each elytron is subtruncate, distinctly denticulate (fig. 25 *d*). The prosternal chin-piece is gently but distinctly emarginate in the middle. The prosternum is scarcely pubescent, finely and not very closely punctured; the intercoxal process is gently convex in the middle, the margins slightly raised, acuminate at the apex (figg. 25 *b*, *c*). The metasternum has a deep median channel. The episterna are sparsely pubescent exteriorly, shining and very obscurely punctured on the inner half. The abdomen is not very closely punctured, the intercoxal process acutangular; there is a slight whitish spot at the side of the second segment; the lateral carina of the basal segment is scarcely sinuous behind the middle.

This species much resembles *A. fasciolatus*, Chevr., from Brazil.

### 75. **Agrilus consimilis.** (Tab. VI. figg. 1, 1 *a–c*.)

Cyaneo-viridis, nitidus; elytris maculis parvis albis notatis.
Long. 3 lin.

*Hab.* GUATEMALA, Panima in Vera Paz (*Champion*).

This species so closely resembles the preceding that at first sight it might be taken to be a mere variety of it. The head is more arched in front and very delicately punctured, the vertex with a somewhat deep longitudinal impression. The thorax is rather finely punctured, and is very finely striolate only towards the sides; there is a very deep central impression at the base (with some white pubescence) and a very indistinct one in front. The elytra have the subcosta scarcely indicated, the surface being flat; each has a small elongate spot before the middle, and between this and the apex there is a second more distinct spot; the apex of each is obtusely rounded and denticulate (fig. 1 *a*). The prosternal chin-piece is gently arcuate. The prosternum is obscurely punctured, clothed with fine whitish pubescence; the intercoxal process is flat, not margined, almost truncate at the apex (figg. 1 *b*, *c*). The metasternum has an impressed median line. The abdomen has some sparse whitish pubescence, which is very long on the

terminal segments; the apex is broadly truncate; the sides of the basal segment are steel-blue; the second segment has a distinct whitish spot at the side; the lateral carina of the basal segment is very slightly sinuate behind the middle, with a white spot above.

### 76. **Agrilus tæniatus.**

*Agrilus tæniatus*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 140[1].

*Hab.* Mexico, Alvarado [1].

This species has a fine posterior ridge to the thorax, close to the margin, and scarcely visible from above. It much resembles in general appearance *A. confusus*, Waterh., near to which it might be placed were it not for the ridge on the thorax.

### 77. **Agrilus nigripennis.**

Æneo-niger, parum nitidus; capite viridi-æneo; thorace cuprascente, transversim striolato, medio bi-impresso; elytris nigris, tenuiter asperatis, ad apicem bene acuminatis.
Long. $2\frac{1}{3}$–$2\frac{2}{3}$ lin.

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith*); Panama, Bugaba, Volcan de Chiriqui 3000 to 4000 feet, Los Remedios (*Champion*).

The head is generally green, but sometimes coppery, rather closely punctured, longitudinally impressed in the middle, with a very slight impression above the clypeus. The thorax is marked with rather closely-placed, curved, oblique, punctured striolæ; the disc has a slight longitudinal impression, which in some lights appears to be divided into two. The elytra are slightly asperate, and somewhat finely rugose below the scutellum; the subcosta is only slightly marked; each elytron has two very small teeth at the sutural angle, then a slight interval between the series of small teeth on the outer margin. The prosternal process is closely and very finely rugose in the middle. The metasternum is rather strongly and moderately closely punctured; the episterna are closely and finely punctured. The abdomen is rather strongly and moderately closely punctured.

Two or three examples out of a long series from Teapa have the elytra bronzy.

### 78. **Agrilus apicatus.** (Tab. VI. figg. 2, 2 *a*.)

Elongatus, subparallelus, sat angustus, niger, nitidus; thorace æneo, bene convexo, tenuiter transversim ruguloso; elytris tenuiter asperato-punctatis, singulis ad apicem excisis.
Long. $2\frac{1}{2}$ lin.

*Hab.* Guatemala, Dueñas (*Champion*).

The head is convex, finely and closely punctured; with a lightly impressed line on the vertex; the lower part of the face is æneous. The thorax is very convex (with scarcely any trace of impression at the sides or posterior angles), slightly narrowed at the base, with the posterior angles somewhat diverging; finely punctured and slightly

rugulose; in some lights a faintly impressed median line may be traced; the posterior ridge is scarcely distinguishable (fig. 2). The elytra are finely and moderately closely punctured, appearing slightly asperate in some lights; the subcosta is not very distinct, curved to the suture just before the apex; each elytron has a small semicircular emargination at the apex (fig. 2 *a*). The prosternal chin-piece is gently emarginate. The prosternum is very finely punctured, the punctures often arranged in irregular transverse lines; the intercoxal process is somewhat deflexed and obliquely narrowed at its apex. The episterna are shining, and with only a few fine punctures on the inner half, pubescent on the outer half. The abdomen is very finely and not closely punctured; the lateral carina of the basal segment is scarcely angulated in the middle, rectilinear posteriorly.

### 79. **Agrilus chalcoderes.**

*Agrilus chalcoderes,* Chevr. Col. Mex. Cent. ii. fasc. 6, no. 143 (1835)[1].

*Hab.* Mexico[1], Playa Vicente (*Sallé*), Oaxaca, Cerro de Plumas, Acapulco (*Höge*), Chilpancingo in Guerrero (*Höge*, *H. H. Smith*), Amula in Guerrero (*H. H. Smith*).

The specimens from the above localities (a long series from Oaxaca and one or two from each of the other places) vary from $2\frac{2}{3}$ to $3\frac{1}{2}$ lines in length. They have yellow pubescence in the lateral impression of the thorax, and the metathoracic episterna, the outer angle of the posterior coxæ, and the posterior angle of the metasternum marked with deep orange-yellow pubescence.

Specimens from the following localities vary from $2\frac{1}{3}$ to $2\frac{1}{2}$ lines in length:—

Mexico, Cordova, Juquila (*Sallé*), Oaxaca (*Höge*); Panama, Bugaba 800 to 1500 feet, Caldera 1200 feet (*Champion*).

These examples (one from Oaxaca, and one or two from each of the other places), besides averaging smaller, have no pubescence on the thorax and no orange marks on the sides beneath. They appear to be in good condition.

It is possible that these two series may represent two species, but I am unable to say to which Chevrolat's type (now in the British Museum) is to be referred. It is $2\frac{4}{5}$ lines in length, and has all the appearance of the specimens from Oaxaca in the first series; it has some yellow pubescence in the lateral thoracic impression, but no orange spots below, nor does Chevrolat mention them in his description.

### 80. **Agrilus impressus.**

*Aphanisticus impressus,* Chevr. Col. Mex. Cent. ii. fasc. 6, no. 145[1].

*Hab.* Mexico, Alvarado[1].

### 81. **Agrilus atripennis.**

*Agrilus atripennis,* Chevr. Col. Mex. Cent. ii. fasc. 6, no. 141 (1835)[1].

*Hab.* Mexico[1], Playa Vicente, Vera Cruz, Panistlahuaca (*Sallé*), Iguala in Guerrero (*Höge*).

### 82. **Agrilus chevrolati.**

Sat depressus, subsurdus, viridi-æneus; thorace rufo-cupreo (vel aurato), subruguloso, disco antice et postice impresso, lateribus fortiter impressis; elytris nigris, crebre asperatis, haud costatis, ad apicem arcuatim acuminatis, apice ipso vix serrulato.

Long. $3\frac{1}{2}$ lin.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*), Toxpam (*Sallé*).

The head is rather flat in front, closely rugose; with a deep longitudinal frontal impression, which descends for two thirds the length of the face, with a slight swelling on each side. The thorax is reddish-coppery, with the extreme anterior margin (which is somewhat arched forward) dark æneous; the disc is transversely impressed in front and longitudinally impressed behind; the lateral impression is deep and abrupt; the posterior ridge is distinct, curved outwards and downwards anteriorly. The prosternal chin-piece is arcuate, but has its margin nearly straight in the middle. The prosternum is rugose, rather flat between the coxæ, and not margined laterally. The metathoracic episterna are closely and rather roughly punctured, with very sparse grey pubescence. The abdomen is very finely and not very closely punctured.

This species is very like *A. chalcoderes* (without yellow pubescence); but is broader, and has the thorax impressed in front and the impression on the head much deeper.

### 83. **Agrilus ignotus.** (Tab. VI. figg. 3, 3 *a*, *b*.)

Latus, sat depressus, parum nitidus, æneus; capite cupreo, crebre punctato; thorace læte cupreo, nitido, fortiter punctato; elytris cyaneis, purpurascentibus, crebre asperatis, brevissime sparsim griseo-pubescentibus, ad apicem arcuatim attenuatis, apice ipso tenuiter serrulato.

Long. $2\frac{1}{2}$–$3\frac{2}{3}$ lin.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*, *H. H. Smith*).

This is a rather short, broad species as compared with *A. chalcoderes*. The head is coppery, verging into brassy at the base of the antennæ, with very short pale pubescence; the punctures are strong and close together, forming curved lines on the vertex; there is a longitudinal impression in the middle, narrow posteriorly, but widening out and becoming more shallow above the clypeus. The thorax is shining coppery, with sparse, very short yellowish pubescence; the punctures are rather strong and are arranged in wavy lines which are not crowded together; the front of the disc is convex; the base is impressed; the lateral impressions are distinct; the posterior ridge is represented by an oblique oval swelling (fig. 3 *a*). The elytra are evenly and moderately closely asperate; the subcosta is faintly marked for nearly the entire length of the elytra. The prosternal chin-piece is distinctly (slightly angularly) emarginate. The prosternum is moderately strongly punctured, the punctures not crowded; the intercoxal process is convex in the middle. The metathoracic episterna are closely and rather finely punctured. The abdomen is densely punctured at the sides (especially at the base), less closely punctured in the middle; the lateral carina

of the basal segment alters its direction posteriorly (fig. 3 *b*). The whole of the sternum is finely pubescent.

Two examples, one from Yolos and the other from Parada, appear to be varieties of this species; but they differ considerably from each other and from the type.

The example from Yolos is $4\frac{1}{2}$ lines long: it differs from the type in having the thorax more coarsely punctured. The specimen from Parada is $3\frac{2}{3}$ lines long: it differs from the type in having the head obscure green, and rather more widely sulcate; the thorax golden, tinted with coppery in the middle; the elytra decidedly more obtuse at the apex, each being somewhat obtusely rounded; and the whole of the underside black.

Three specimens from Chilpancingo ($2\frac{4}{5}$ to $3\frac{1}{2}$ lines long) differ from the type in being relatively narrower, especially the smaller examples; and they are brassy above, with the elytra faintly tinted with coppery.

Two examples, one from Panistlahuaca (*Sallé*) and one from "Interior of Mexico, *Turner*" (*Brit. Mus.*), agree fairly with the type, except that they are uniform brassy-green above, and the elytra appear rather more closely rugose.

It is not improbable that I may be here associating several closely allied species, but some of the differences may be sexual.

### 84. **Agrilus marginatus.**

Latus, sat depressus, fere niger, parum nitidus; capite rugoso, longitudinaliter sulcato; thorace aureo-cupreo, fortiter rugoso, lateribus nigro-purpureis; elytris crebre asperatis, brevissime griseo-pubescentibus, violaceo-nigris, ad apicem subtruncato-rotundatis, tenuiter serrulatis.

Long. $3\frac{1}{3}$ lin.

*Hab.* Mexico, Oaxaco (*Sallé*).

The longitudinal channel on the head is only moderately deep and rather wide, having no abrupt limits. The thorax is coarsely rugose, with some shining wavy rugæ on each side of the disc; the disc has a moderately well-marked oval impression in front, and another at the base; the lateral impression is very slight; the posterior ridge is distinct, short, slightly directed inwards. The elytra have the subcosta very slightly marked. The prosternal chin-piece is distinctly emarginate. The prosternum is closely and rather finely rugose; the intercoxal process is not margined. The meta-thoracic episterna are finely rugose on the outer side, but with a smoother inner margin. The abdomen is moderately finely punctured, generally in wavy lines, the punctures much less distinct in the middle than at the sides. The whole of the underside of the insect is more or less clothed with very short fine pubescence.

### 85. **Agrilus bicolorellus.**

*Agrilus bicolorellus*, Thomson, Typi Buprest. p. 90[1].

*Hab.* Mexico[1].

"*A. ruficollis*, Fabr., affinis sed alius."—*Th.*

This is possibly conspecific with one of the foregoing species, but I cannot identify it.

### 86. **Agrilus vigilans.** (Tab. VI. figg. 4, 4 *a*, *b*.)

Ænescens, nitidus ; capite viridi-cyaneo, crebre punctato, medio sulcato ; thorace læte cyaneo, undatim striolato, antice et postice foveola impresso ; elytris rufo-cupreis, macula basali altera ante medium oblonga griseo-pubescentibus, apice pube grisea asperso ; antennis nigris, basi æneis.

Long. $2\frac{1}{2}$ lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

The head is rather strongly punctured, but the punctures are somewhat vague ; the longitudinal channel extends from the clypeus nearly to the back of the head ; the clypeus is brassy. The thorax is blue (tinted with green in some lights) ; the two discoidal impressions are distinct, slightly elongate ; the posterior ridge is fine and nearly straight (fig. 4 *a*). The elytra are closely asperate, reddish-coppery, with the sutural area inclining to purple and the apex tinted with golden, very acuminate at the apex ; the subcosta is distinct, gradually approaching the suture posteriorly ; each elytron has a pale grey pubescent spot at the base and another oblong one just before the middle, and the whole of the apex is sprinkled with fine short pubescence of the same colour. The prosternal chin-piece is gently emarginate. The prosternum is finely, but rather roughly punctured, especially the intercoxal process, which has its lateral margins raised. The metathoracic episterna are finely and closely punctured. The abdomen is finely and moderately closely punctured ; the lateral carina of the basal segment is parallel to the margin of the elytra (fig. 4 *b*).

A second specimen from the same locality differs from the one above described in being greenish-golden, with the elytra coppery ; the antennæ longer, reaching to the base of the thorax ; the elytra apparently rather narrower, and each more decidedly obliquely truncate inside and outside at the extreme apex, which is serrate ; the head and thorax more roughly sculptured ; and the prosternal process more densely clothed with silky pubescence.

These differences may be sexual.

### 87. **Agrilus simulans.** (Tab. VI. figg. 5, 5 *a*.)

Ænescens, nitidus ; capite thoraceque cyaneis ; elytris cuprascentibus, macula basali altera ante medium strigaque apicali griseo-pubescentibus ; abdominis marginibus plus minusve rufo-cupreis, segmenti basalis carina laterali medio sinuata ; metasterno coxisque posterioribus pube ochracea ornatis.

Long. $2\frac{1}{2}$ lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

This insect is extremely like *A. vigilans*. It differs, however, in the following points :—The punctuation of the head is very fine, and the colour is more violet. The elytra have the subcosta parallel to the suture for about two thirds their length, and then it rather suddenly turns in towards the suture, and then again runs parallel to it (fig. 5), the space between it and the suture being filled by a narrow stripe of pale

yellowish-grey pubescence. The division between the true first and second segments of the abdomen is marked by a strong sinuosity in the lateral carina (with a whitish pubescent spot above), and by an impression at the side of the segment (fig. 5 *a*). The prosternal chin-piece is more distinctly emarginate.

### 88. **Agrilus speciosus.** (Tab. VI. figg. 6, 6 *a*.)

Subtus nigro-æneus; capite æneo, crebre fortiter punctato; thorace æneo, nitido, tenuiter haud crebre punctato, transversim tenuiter striolato; elytris rufo-cupreis, tenuiter asperatis, ante apicem angustatis, maculis sex griseo-flavis ornatis.
Long. $2\frac{1}{6}$ lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

The head is nearly flat in front, closely and finely punctured, not sulcate. The thorax is convex, scarcely perceptibly impressed in front; the posterior ridge is fine and distinct, nearly straight (fig. 6 *a*). The elytra have the subcosta fairly well marked; each elytron has three yellowish spots—one at the base, the second about the middle, and the third a little nearer the apex than to the second spot; the apex of each elytron is obliquely rounded off exteriorly, and finely serrate. The prosternal chin-piece is rounded anteriorly. The prosternum is finely and closely punctured, and slightly pubescent; the intercoxal process is not very distinctly margined laterally. The metathoracic episterna are finely punctured. The abdomen is moderately finely and not very closely punctured. The basal joint of the posterior tarsi is rather short.

### 89. **Agrilus asperulus.** (Tab. VI. figg. 7, 7 *a*, *b*.)

Parum convexus, fere niger; capite nigro-æneo, nitido, crebre evidenter punctato, medio sulcato; thorace obscure æneo, nitido, creberrime granuloso; elytris viridi-aureis, sutura late æneo-nigra.
Long. $2\frac{1}{2}$ lin.

*Hab.* Mexico, Ciudad in Durango 8100 feet (*Forrer*).

The head is gently convex in front; the channel is well marked, and extends from the clypeus to the vertex (fig. 7 *b*). The thorax is convex in front, with a slight elongate impression in the middle of the base; the posterior ridge is fine but distinct, nearly straight (fig. 7 *a*). The elytra are densely and finely rugose, with scarcely any trace of the subcosta. The prosternal chin-piece is arcuate. The prosternum is finely punctured. The abdomen is finely and not very closely punctured.

### 90. **Agrilus mutabilis.**

Æneus, parum nitidus, elytris rufo-cupreis, ad suturam purpureis; capite confertim rugoso-punctato; thorace crebre punctato et transversim undulato-ruguloso; elytris planiusculis, confertim sat fortiter asperatis, ad apicem denticulatis; prosterno crebre punctato; abdomine striolato.
*Var.* thorace elytrisque concoloribus.
Long. 3 lin.

*Hab.* Mexico, Oaxaca (*Höge*).

The front of the head is rather more finely punctured in the male than in the female, and more pubescent; there is a slight impressed line in the middle. Some of the

examples have two very slight impressions on the disc of the thorax; the usual ridge at the posterior angles is very short, curved. The elytra are rather flattened, the subcosta only slightly distinguishable at the middle; the suture is generally purple, verging into blue-green at the middle; the denticulation at the apex is very fine and not very distinct. The underside of the insect is sparingly clothed with very short pale grey pubescence. The prosternum is densely and finely punctured. The metathoracic episterna are closely and finely punctured. The abdomen is finely but distinctly punctured, the punctures not very close together.

### 91. **Agrilus furcillatus.**

*Agrilus furcillatus*, Chevr. Col. Mex. Cent. i. fasc. 3, no. 50 [1]; Cast. & Gory, Mon. ii. p. 15, t. 3. f. 16.

*Hab.* Mexico, Orizaba [1], Cordova, Tuxtla (*Sallé*), Jalapa in Vera Cruz (*Höge*), Atoyac in Vera Cruz, Cuernavaca in Morelos (*H. H. Smith*); Guatemala, Dueñas, San Gerónimo 3000 feet (*Champion*); Honduras (*Sallé*); Nicaragua, Chontales (*Belt*); Costa Rica, Irazu 6000 to 7000 feet (*Rogers*).

### 92. **Agrilus sulcatulus.**

*Agrilus sulcatulus*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 139 [1]; Cast. & Gory, Mon. ii. p. 17, t. 4. fig. 19.

*Hab.* Mexico [1], Villa Lerdo in Durango, Tupataro in Guanajuato, Mexico city, Cordova (*Höge*), Puebla (*Sallé*), Amula in Guerrero 6000 feet (*H. H. Smith*).

### 93. **Agrilus eupalamus.**

*Agrilus eupalamus*, Gory, Mon. iv. p. 217, t. 36. fig. 207 [1].

*Hab.* Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—Colombia [1], Bogota (*Brit. Mus.*).

### 94. **Agrilus catherinæ.**

*Buprestis bifasciata*, Gray in Griffith's Anim. Kingd. xiv. p. 258, t. 31. fig. 3 (1832) (sine descr.; nec Olivier).

*Stenogaster catherinæ*, Chevr. Col. Mex. Cent. ii. fasc. 8, no. 191 (1835) [1].

*Agrilus bifasciatus*, Cast. & Gory, Mon. ii. p. 21, t. 4. fig. 24 (1841).

*Hab.* Mexico, Tepetlapa in Guerrero 3000 feet (*H. H. Smith*), Tuxtla, Cordova (*Sallé*), Almolonga, Jalapa (*Höge*), Vera Cruz [1], Temax in Yucatan (*Gaumer*); Guatemala, San Gerónimo (*Champion*).

### 95. **Agrilus splendidipodex.**

*Agrilus splendidipodex*, Thomson, Typi Buprest. p. 89 [1].

*Hab.* Mexico [1].

This species is stated to be allied to *A. catherinæ*.

## 96. **Agrilus aureus.**

*Agrilus aureus,* Chevr. Silberm. Rev. Ent. v. p. 98 [1].

*Hab.* Mexico, Tuspan [1], Puebla, Guanajuato (*Sallé*), Tupataro in Guanajuato (*Höge*).

## 97. **Agrilus biemarginatus.** (Tab. VI. figg. 8, 8 *a*, *b*.)

Elongatus, angustus, subparallelus, nitidus, supra obscure cyaneus, subtus cupreus; capite antice viridi, medio leviter impresso; thorace convexo, tenuiter striolato, medio sulcato; elytris tenuiter rugosis, maculis sex argenteis ornatis, singulis ad apicem sat profunde excisis.
Long. $2\frac{1}{2}$ lin.

*Hab.* Guatemala, near the city (*Champion*).

The head is rather closely punctured and slightly rugulose, with a very slight median impression. The thorax is rather long, very convex in front, impressed at the base; the median channel is narrow, more strongly marked in front than at the base; the striation is very fine, generally transverse, but longitudinal at the sides. The elytra are a little narrowed below the shoulders, as broad behind the middle as at the shoulders; the apex is obtuse, each elytron having a semicircular emargination (fig. 8 *a*); the subcosta is only distinguishable before the middle; the colour is obscure steel-blue, with the basal impression, a patch at the side, before the middle, and a spot near the suture at a little distance from the apex, æneous; each elytron has a small silvery spot at one quarter from the base, another about the middle, and an oblique one not far from the apex. The prosternal chin-piece is arcuate. The prosternum is finely punctured, slightly pubescent; the intercoxal process is rather flat, rounded at the apex. The episterna are pubescent on the outer side, shining and sparsely punctured on the inner side. The abdomen is finely punctured, with a pubescent spot at the side of the second segment; the lateral carina is slightly sinuous at the middle, with a silvery spot above (fig. 8 *b*).

## 98. **Agrilus ratus.** (Tab. VI. fig. 9.)

Niger, nitidus, capite thoraceque ænescentibus, elytris nigro-æneis, plagis æneis griseo-pubescentibus ornatis; capite lato, longitudinaliter sulcato, oculis prominulis; thorace basi angustato, medio sulcato; elytris rugosis, æneis, fascia post medium apiceque nigris.
Long. $2\frac{1}{3}$ lin.

*Hab.* Guatemala, Sabo in Vera Paz (*Champion*).

This species is noticeable for its broad head and prominent eyes. The top of the head is biconvex, the face is longitudinally sulcate. The thorax is moderately broad, gradually narrower to the base, straight at the sides, vermiculate-rugulose, impressed at the sides and base; with a somewhat deep median channel. The elytra are rather coarsely rugose, brassy, with a moderately broad fascia behind the middle, and the apex nearly black; the brassy parts are clothed with grey pubescence. The prosternal

chin-piece is gently emarginate. The prosternum is coriaceous, with punctures placed not very close together over the surface; the intercoxal process is acuminate posteriorly. The episterna are pubescent on the outside, shining on the inner half, punctured, the punctures irregular and not very close together. The lateral carina of the basal segment of the abdomen is nearly rectilinear posteriorly.

### 99. **Agrilus pullulus.** (Tab. VI. figg. 10, 10 *a*.)

Niger, nitidus; capite convexo, linea mediana leviter impresso; clypeo æneo; thorace ruguloso, medio longitudinaliter impresso; elytris æruginoso-nigris (basi æneo-tincta), tenuiter rugosis, ad apicem lævioribus, maculis griseo-albis ornatis.

Long. $2\frac{1}{6}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

The head is convex and very shining, rugulose, the rugæ oblique on the top of the head, transverse on the lower part of the face; the median impressed line is not very strongly marked above, but is deeper and a little wider above the clypeus. The thorax is convex, rugulose, shining, with the sides gently and evenly arcuate; the median impression is moderately broad, but a little narrowed about the middle, the posterior angles are only comparatively little impressed; all the basal region is sparingly clothed with grey pubescence. The elytra are a little compressed below the shoulders; as broad behind the middle as at the shoulders; there is an elongate spot at the suture (slightly interrupted at its middle), which is joined posteriorly to a transverse lateral spot just behind the middle; near the apex there is another spot, broad at the suture, narrowed to the margin. The prosternal chin-piece is deeply emarginate. The prosternum is distinctly and not very closely punctured, shining; the intercoxal process is acuminate, gently convex, finely margined (fig. 10 *a*). The episterna are shining, with some fine, rather distant punctures. The abdomen has the lateral carina of the basal segment rectilinear posteriorly; there is a distinct white spot at the side of the second segment.

The posterior coxæ are clothed with white pubescence.

### 100. **Agrilus confusus.** (Tab. VI. fig. 11.)

Præcedenti simillimus, differt tamen thorace postice angustato; capite antice, episternis femoribusque æneis.

Long. 2 lin.

*Hab.* Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This insect so closely resembles the preceding that it is with reluctance that I separate it. The prosternum is finely rugose, but this and the brassy colour of the head might be sexual; I think, however, that this is not the case, as there is a very distinct difference in the form of the thorax, the sides being gently sinuate behind the middle instead of regularly arcuate (fig. 11).

### 101. **Agrilus acclivis.** (Tab. VI. fig. 13.)

*A. pullulo* similis, at multo minor, capite antice femoribusque aureo-viridibus.
Long. $1\frac{2}{3}$ lin.

*Hab.* GUATEMALA, Zapote (*Champion*).

This insect closely resembles *A. pullulus*, but is much smaller and has the front of the head bright golden-green. The prosternum is finely rugose, and in other respects agrees with that of *A. confusus*. The abdomen of the only specimen before me has no spot at the side of the second segment; and the lateral carina of the basal segment is slightly curved about the middle (fig. 13).

### 102. **Agrilus acceptus.** (Tab. VI. figg. 12, 12 *a*.)

*A. pullulo* similis, at minor, toto æneus, nitidus.
Long. $1\frac{2}{3}$ lin.

*Hab.* GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

This species is very like *A. pullulus*, but is entirely brassy, except the lower part of the face, which is green. The face is densely striolate, the striæ curved inwards and downwards, with rather large punctures arranged in curved lines. The elytra have the shining space between the discoidal and subapical spots of a darker shade than the rest of the surface. The prosternum, which in *A. pullulus* is bare, is clothed with long pubescence. The episterna are smooth on the inner half, with a line of small punctures. The abdomen has the lateral carina of the basal segment rectilinear posteriorly (fig. 12 *a*); there is a spot at the side of the second segment. The posterior tarsi are very long and slender.

### 103. **Agrilus temporalis.** (Tab. VI. fig. 14.)

*A. accepto* affinis et similis, minus angustus, æneus, capite antice viridi.
Long. $1\frac{2}{3}$ lin.

*Hab.* GUATEMALA, Capetillo (*Champion*).

This insect resembles the preceding. It is, however, relatively less narrow; the thorax is less cylindrical, with the sides more impressed and inclined to be angular behind the middle; the discoidal impression is more divided in the middle, the anterior portion more transverse, so that there appear to be two impressions rather than a channel. The head is coarsely rugose, and does not show transverse rugæ at the lower part of the face. Each elytron has two pubescent spots (one above the other) at the suture before the middle, but there is no lateral spot. The prosternum is finely coriaceous, with large punctures placed irregularly, not pubescent.

### 104. **Agrilus refectus.** (Tab. VI. figg. 15, 15 *a*.)

Æneus, nitidus; capite convexo, linea mediana impresso; thorace basi paullo angustato, lateribus subrectis,



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disco bi-impresso; elytris maculis inconspicuis (quatuor ante medium et duabus ante apicem) griseis, fascia post medium vage cuprascente, nitida, ornatis.

Long. $1\frac{2}{3}$ lin.

*Hab.* GUATEMALA, Calderas 7000 feet (*Champion*).

The head is convex, shining, with an impressed median line; the top of the head is rugulose, the upper part of the face with rather large punctures, the lower part with transverse shining rugæ. The thorax is broadest just before the front angles, narrowed to the base, striolate, the striolæ not very close together, the intervals slightly convex; the disc has a shallow impression in front, which is confluent with a larger one at the base; the posterior angles and the base are impressed; the sides (which are rectilinear) are narrowly but distinctly reflexed. The elytra are rugose, smoother towards the apex, with a brownish-coppery band behind the middle; each elytron has two indistinct spots near the suture before the middle, and another at a short distance from the apex. The prosternal chin-piece is large, with a deep central emargination. The prosternum is shining, very finely sculptured, without punctures; the intercoxal process is finely transversely wrinkled, acuminate posteriorly (fig. 15 *a*). The episterna are shining, punctured on the outer margin. The lateral carina of the basal segment of the abdomen is rectilinear posteriorly.

105. **Agrilus parvus.** (Tab. VI. fig. 16.)

Æneus, nitidus; capite convexo, fortiter punctato; thorace lato, convexo, ruguloso, basi impresso, lateribus rotundatis, tenuiter marginatis; elytris rugosis, immaculatis.

Long. $1\frac{4}{5}$ lin.

*Hab.* MEXICO, Guanajuato (*Sallé*).

This insect is allied to the preceding, but is easily distinguished by the evenly convex thorax, which has the sides unusually rounded. The head is convex (the eyes not prominent), finely coriaceous, and coarsely punctured, the punctures forming curved lines at the top; there is a shallow small impression above the clypeus, and a not deeply impressed line on the vertex. The thorax is broad and convex, somewhat coarsely and closely rugulose (with a very indistinct indication of a median channel); rather more narrowed at the base than at the front, the sides arcuately rounded, with a small impression at the base near the posterior angle. The elytra are slightly narrowed below the base, a little broader behind the middle than at the shoulders; impressed or flattened on the disc. The prosternal chin-piece is gently emarginate. The prosternum is shining, with numerous punctures scattered over the surface; the intercoxal process is acuminate posteriorly. The episterna are finely coriaceous, with a few cuneiform punctures. The abdomen has the lateral carina of the basal segment rectilinear posteriorly.

## 106. **Agrilus basalis.**

*Agrilus basalis*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 144 (1835)[1].

*Hab.* Mexico, Alvarado [1], Cordova (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*).

All the examples of this species in the British-Museum collection as well as those received from M. Sallé differ from the type in having the front of the head green.

## 107. **Agrilus punctatissimus.**

Æneus; capite thoraceque rufo-cupreis, creberrime punctatis; elytris nigro-purpureis, basi obscure viridi-æneis, sat dense pube flavo-grisea vestitis, basi lateribusque fere usque medium calvis.
Long. $3\frac{1}{6}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

The head is convex, with a not very deep longitudinal channel in front; the clypeus is green. The thorax is convex anteriorly, with a very shallow impression in front of the middle; the extreme anterior and posterior margins are tinted with blue; the posterior ridge is very short and indistinct, obliquely directed inwards. The elytra are very densely punctured, more granular at the base; they are considerably widened at the posterior two thirds, and then narrowed to the apex, the apex of each elytron being obliquely truncate inside and outside; the subcosta is very slightly marked. The prosternal chin-piece is distinctly emarginate. The prosternum is closely and finely punctured and slightly pubescent; the intercoxal process is very slightly raised in the middle, not margined at the sides. The metathoracic episterna are closely punctured on the outer half, nearly smooth on the inner side. The abdomen is very delicately punctured, the punctuation dense at the base; the three apical segments have each a whitish pubescent spot at the sides. The legs are long and slender; the basal joint of the posterior tarsi is very long.

This species so closely resembles *A. basalis* that I separate it with hesitation. It differs in having the basal margin only of the thorax greenish-blue, whereas in *A. basalis* the green colour extends one third the length of the thorax; the disc has a shallow impression in front, and is not longitudinally channelled as in *A. basalis*; and, lastly, there is a slight oblique posterior ridge, which is not present in *A. basalis*.

## 108. **Agrilus dimidiatus.** (Tab. VI. figg. 17, 17 *a*.)

Cyaneus, sat nitidus; capite thoraceque læte rufo-cupreis; elytris cyaneo-viridibus, dimidio apicali pube griseo-flava sat dense vestitis, pube ad suturam scutellum versus paullo ascendente; abdomine maculis niveis ornato.
Long. $2\frac{2}{3}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

The head is convex, longitudinally striolate on the top, shining, and not very closely punctured in front, with a well-marked Λ-shaped impression. The thorax is rather short, convex in front, deeply impressed at the base, closely rugulose, the rugæ curved;

the lateral margins and the extreme base are violet; the posterior ridge is absent. The elytra are moderately closely punctured, but the punctuation is not clearly defined. The prosternal chin-piece is gently arcuate. There is a pure white pubescent spot at the side of the metasternum; the posterior coxæ and the outer half of the metathoracic episterna are clothed with white; and there is a distinct white spot on the basal segment of the abdomen above, a rather large one at the side of the second segment, and smaller ones on the third and fourth segments. The lateral carina of the basal segment is sinuous about the middle (fig. 17 *a*).

### 109. **Agrilus spissus.** (Tab. VI. figg. 18, 18 *a*.)

Rufo-cupreus; capite crebre punctulato, antice maculis duabus flavis ornato, vertice virescente; thorace crebre ruguloso, disco bi-impresso, macula mediana et laterali pallide flavis; elytris griseo-nigris, opacis, pube brevissima flavo-grisea vestitis, confertim subtiliter granulatis; abdominis marginibus supra aureo-pubescentibus.

Long. $3\frac{1}{4}$–4 lin.

*Hab.* MEXICO, Jalapa (*Höge*); GUATEMALA, Quiche Mts. 7000 to 9000 feet, San Gerónimo (*Champion*).

The head is shining in front, closely and finely punctured; there is a well-marked impression above the clypeus, and a larger wider one at the upper part of the face, with a longitudinal impressed median line. The example from Guatemala has the front of the head bright golden-green: no doubt this is a male character. The thorax has two slight impressions on the disc, the anterior one rather larger than the posterior, both sometimes concealed by the yellow pubescence; the posterior ridge is somewhat curved, and is not well marked. The elytra are rather flat, densely and finely granular; the subcosta is faintly indicated; in one example the fine pubescence shows a tendency to form a narrow stripe on the inside of the subcosta. The prosternal chin-piece is distinctly emarginate. The prosternum is convex, finely punctured, the punctures slightly separated from each other; the intercoxal process is slightly flattened at the sides, obtusely angular at the apex (fig. 18 *a*). The episterna are pubescent on the outer half, shining, sparingly punctured, and with transverse impressed lines on the inner half. The abdomen is finely punctured, slightly pubescent; the lateral carina of the basal segment is scarcely bent at the middle, rectilinear posteriorly.

### 110. **Agrilus planipennis.**

Niger; capite thoraceque æneis, hoc basi rufo-cuprea; elytris confertim granulatis, post medium sat ampliatis.

Long. $3\frac{1}{2}$ lin.

*Hab.* MEXICO, Juquila, Tuxtla (*Sallé*).

This species is very similar in appearance to *A. gracilitarsis*, but is different in form, and is black beneath. The head is narrow; deeply longitudinally impressed, the impression extending to the top of the head and visible from above. The thorax

is a little narrower in front than behind, without any discoidal fovea; the posterior ridge is very short, and often very indistinct. The elytra are relatively a little shorter, less attenuated at the apex, and wider behind the middle than at the shoulders; the granulation is a little less even and the granules are slightly separated from each other. The episterna are rather closely rugose, not pubescent. The abdomen has the lateral carina of the basal segment rectilinear posteriorly. The antennæ are moderately long and broad.

### 111. **Agrilus planatus.** (Tab. VI. fig. 19.)

Niger; capite thoraceque æneis, hoc basi rufo-cuprea; elytris confertim granulatis.
Long. 3–3$\frac{1}{3}$ lin.

*Hab.* Guatemala, near the city, Dueñas (*Champion*).

This species is very close to *A. planipennis*, but is relatively narrower, the elytra longer and less dilated behind the middle. The head is more shining, and the impression is narrower and not so deep on the vertex, so that it is not so noticeable when viewed from above. The antennæ are perhaps a little broader (fig. 19).

### 112. **Agrilus gracilitarsis.** (Tab. VI. fig. 20.)

Obscure æneus; thorace rufo-cupreo, margine antico medio æruginoso, basi foveola notata; elytris griseo-nigris, brevissime pubescentibus, confertim subtiliter granulatis.
Long. 3$\frac{1}{2}$ lin.

*Hab.* Guatemala, Capetillo (*Champion*).

This species is closely allied to the preceding, but is longer and narrower, the elytra being about four times the length of the thorax, whereas in *A. spissus* they are only three times as long. The head is blackish; the impressions are similar but less distinct; when viewed from above it appears to have scarcely any frontal impression. The thorax is rather broad in front, gradually narrowed posteriorly, finely rugulose; dull reddish-coppery with a bluish-green mark in front; there is a distinct elongate shining fovea in the middle near the base. The elytra are more gradually attenuated posteriorly. The posterior tarsi are very long and slender. The prosternal chin-piece is distinctly emarginate. The prosternum is rugose; the intercoxal process is obliquely acuminate posteriorly. The episterna are rather strongly and moderately closely punctured, sparsely pubescent. The abdomen has the lateral carina of the basal segment a little more bent at the middle.

### 113. **Agrilus blandulus.**

*Agrilus blandulus*, Guérin, Rev. Zool. 1844, p. 256[1].

*Hab.* Mexico[1], Orizaba (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*).

### 114. **Agrilus signatus.** (Tab. VI. fig. 21.)

Obscure cyaneo-griseus, pubescens; thorace leviter convexo, confertim punctato; elytris nigro-velutinis, maculis æruginosis griseo-pubescentibus ornatis; corpore subtus lateribus nigris albo-maculatis.
Long. $3\frac{4}{5}$ lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

This species is very like *A. blandulus*, but may easily be distinguished by the episterna being very distinctly punctured on the inner half, whereas in *A. blandulus* they are nearly smooth. The markings on the elytra are also slightly different: there is an oblique spot near the base, an elongate spot at the side about the middle, margined with grey pubescence, and a slightly oblique fascia at a short distance from the apex; in *A. blandulus* this fascia is broader and less defined, extending almost to the apex. The femora are blue.

### 115. **Agrilus albofasciatus.** (Tab. VI. figg. 22, 22 *a*.)

Æneus, sat nitidus; capite obscure cupreo, crebre punctulato, medio foveato; thorace bene convexo, obscure cupreo, transversim sat fortiter ruguloso, medio subcanaliculato; elytris purpureis, sat crebre asperatis, medio angustioribus, ad apicem obtuse rotundatis, serrulatis, plaga subapicali cyanea, fascia obliqua ad medium, altera ante apicem albis.
Long. $3\frac{1}{3}$ lin.

*Hab.* MEXICO, Guanajuato (*Sallé*).

The head is convex, with an ovate impression in front. The thorax is very convex, with no distinct lateral impression, narrowed slightly at the base; the posterior angles are impressed, slightly diverging; the median impression is narrow, moderately deep in front, scarcely noticeable posteriorly. The elytra have the subcosta very slightly indicated, and they are rather broad before the apex; the sutural area near the apex is steel-blue; there is a small indistinct white spot at one quarter from the base, an oblique spot at the middle, and a much more distinct oblique fascia near the apex; there is also some white pubescence on the outer half of the apex. The prosternal chin-piece is gently emarginate. The prosternum is rugose; the intercoxal process is slightly convex, narrowed to the apex. The episterna are sparsely punctured, with a little pubescence at the base and outer margin. The abdomen is rather closely punctured; the lateral carina of the basal segment is rather strongly angular at the middle, with some silvery-white pubescence above (fig. 22 *a*); the second segment has a white spot at the side.

### 116. **Agrilus xanthonotus.**

Æneus, nitidus, supra cyaneus; thorace sat lato, basi angustata, crebre punctato, lateribus impressis, ochraceo-maculatis; elytris crebre punctatis, maculis sex ochraceis ornatis, apice quadrispinoso; corpore subtus ochraceo-maculato.
Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Juquila (*Sallé*), Tehuantepec (*Sumichrast*); Panama, Caldera 1200 feet (*Champion*).

The head is very closely and rather strongly punctured, longitudinally impressed for its whole length. The thorax is rather unusually rounded at the sides; convex, transversely striolate and punctured, the punctures not distinct in front; there is a small indistinct impression at the base; the sides are impressed and the impression is filled with yellow pubescence. The elytra are distinctly punctured with cuneiform punctures which are not crowded together; the subcosta is fairly well marked, sinuous at the sides of the yellow spots; the yellow spots are elongate-ovate—the first oblique, in the basal impression, the second just before the middle, the third halfway between the second and the apex; the apex of each elytron is deeply excised, leaving a short tooth (generally bifid) at the suture, and a rather longer acute spine beyond the middle, outside which there are one or two small teeth. The prosternal chin-piece is slightly arcuate. The prosternum is closely and finely punctured and pubescent in the male, more strongly rugose and bare in the female; the intercoxal process is obliquely narrowed at the apex. The episterna, the sides of the metathorax, the posterior coxæ, a spot on the upper margin and at the sides of the basal segment of the abdomen, and a spot at the side of the second segment are deep yellow. The abdomen is finely punctured, with a narrow elongate finely punctured impression in the middle of the true basal segment; the sides and apex are nearly black; the lateral carina is strongly angular behind the middle.

### 117. **Agrilus croceomaculatus.** (Tab. VI. figg. 23, 23 *a*.)

Præcedenti affinis et similis, differt tamen elytrorum dente apicali exteriore majore, crassiore.
Long. $4\frac{1}{2}$ lin.

*Hab.* Guatemala, Paraiso 300 feet (*Champion*).

This species is extremely like the preceding, but differs in the shape of the apex of the elytra: the sutural tooth is more acute and a little longer, the emargination deeper and narrower, and the external tooth is formed by a prolongation of the exterior angle of the elytron, its outer margin being denticulate (fig. 23 *a*).

### 118. **Agrilus croceovittatus.**

*A. xanthonoto* affinis et similis, differt tamen elytris vitta suturali lata crocea, dentibus apicalibus quatuor subæqualibus.
Long. 4 lin.

*Hab.* Guatemala, Zapote (*Champion*); Nicaragua, Chontales (*Belt*).

This species is very like *A. xanthonotus*, but is rather smaller and has the spots on the elytra replaced by a broad stripe.

### 119. **Agrilus flavoguttatus.**

Æruginosus, sat nitidus; capite rugoso, antice impresso; thorace postice angustato, subsurdo, transversim tenuiter striolato et sparsim punctato, lateribus flavo-marginatis, angulis posticis prominulis; elytris sat crebre punctatis, punctis cuneiformibus, maculis sex flavis ornatis, apice pauci-dentato; corpore subtus flavo-maculato.

Long. $3\frac{1}{3}$–4 lin.

*Hab.* GUATEMALA, Panzos in Vera Paz (*Conradt*).

The head is longitudinally sulcate, and in two of the examples is impressed at the upper part of the face; densely punctured, the punctures having a tendency to form oblique lines. The thorax is rather broad in front, narrowed posteriorly to near the posterior angles, not very convex; striolate, each striola having a puncture in it, slightly rugulose towards the sides anteriorly; the disc has a small round impression in front, and there is a less distinct longitudinal one at the base; the sides are impressed and have a broad band of yellow pubescence; the posterior ridge is absent. The elytra are moderately closely punctured with cuneiform punctures; the subcosta is tolerably well marked, slightly curved at each of the yellow spots; each elytron has three yellow spots—the first is in the basal impression, the second is rather elongate and placed before the middle, and the third is similar and placed halfway between the second and the apex; the apex is rounded and has a few small teeth. The prosternal chin-piece is arcuate. The prosternum is closely rugose; the intercoxal process is obliquely narrowed at the apex, with the central process at a lower level. The episterna are entirely covered with yellow pubescence, which extends also to the posterior angle of the metasternum and on to the posterior coxæ. The abdomen has an elongate yellow spot on the upper margin of the basal segment, and a transverse spot at the side below, with a contiguous longitudinal spot at its inner end; the second segment has an elongate spot on its upper margin and a triangular spot below; the lateral carina of the basal segment is somewhat curved at the lateral spot.

One example has the intercoxal prosternal process and the metasternum more finely rugose than the others, and with very fine yellowish-grey pubescence; the metasternum has only a very fine indistinct median line instead of a very distinct one as in the other examples; and the basal segment of the abdomen is longitudinally impressed in the middle. These are no doubt sexual differences, but they do not correspond with the difference above-mentioned in the frontal impressions.

### 120. **Agrilus striativentris.** (Tab. VI. figg. 24, 24 *a*.)

Æneus, nitidus; capite lato, crebre punctato, antice virescente, medio canaliculato, oculis prominulis; thorace convexo, postice angustato, creberrime punctato et oblique tenuiter ruguloso, lateribus postice impressis virescentibus; elytris postice parum angustatis, crebre subasperato-punctatis, singulis ad apicem rotundatis, denticulatis, macula parum conspicua ante medium, altera post medium pallide flavis ornatis; abdominis segmento basali basi impressa, longitudinaliter tenuiter striolato.

Long. $3\frac{1}{3}$ lin.

*Hab.* MEXICO, Cordova (*Sallé*).

The eyes are somewhat prominent laterally, and slightly angular posteriorly. The thorax is convex in front, impressed at the base, the sides rather broadly impressed posteriorly; the posterior ridge is only indicated by a slight raised line which is much obscured by the punctuation. The elytra are rather rugose at the base, but smoother at the apex; the subcosta is only indicated at the side of the slightly elongate pubescent spots; the denticulation at the apex is very regular. The prosternal chin-piece is not arched forward, but is rectilinear in front. The prosternum is rugose, slightly curved down posteriorly, truncate at the apex, with a central narrow process at a lower level. The episterna are rugose, not pubescent. The abdomen is finely punctured; the basal segment gently concave at the base and finely striated (fig. 24 *a*); the lateral carina is rectilinear posteriorly. The posterior femora are slightly incrassate; the basal joint of the posterior tarsi rather short.

### 121. **Agrilus laticeps.** (Tab. VI. figg. 25, 25 *a*, *b*.)

Elongatus, nitidus, postice attenuatus, æneo-cyaneus; capitis vertice thoraceque nigrescentibus; elytris obscure purpureis, costa postice suturam versus subito incurvata; abdomine segmento basali medio leviter sulcato. Long. 3 lin.

*Hab.* GUATEMALA, Capetillo (*Champion*).

The head is short and broad, closely and rather coarsely punctured, longitudinally impressed in front (with a fine median line), and has a little silvery pubescence above the clypeus; the basal joints of the antennæ are rather long. The thorax is rather parallel at the sides, obliquely narrowed at the base, moderately strongly transversely rugulose and finely punctured (the rugæ on the disc having a rough appearance); the sides are impressed and the impressions encroach on the disc on each side a little behind the middle; there is no distinct posterior ridge. The elytra are closely and rather finely rugose, gradually narrowed to the apex; the suture is distinctly raised behind the middle, but is below the level of the surface at the apex; the subcosta is very well marked, parallel to the suture for two thirds its length and then suddenly curved in to the suture; there is some short silvery pubescence at the apex near the suture. The prosternal chin-piece is short, rather strongly emarginate. The prosternum is closely punctured, but has a smooth space in the middle; the intercoxal process is truncate at the apex. The episterna are rather closely punctured, slightly pubescent on the outer side. The abdomen is finely and not very closely punctured; the basal segment with a very distinct longitudinal, closely punctured, and slightly pubescent impression, acuminate posteriorly and nearly extending to the apex (fig. 25 *a*); there is a patch of silvery pubescence on each side at the base, and a transverse impression behind the middle (also filled with short silvery pubescence); the lateral carina is deeply sinuate behind the middle (fig. 25 *b*); there is a pubescent spot at the side of the second segment. The basal joint of the posterior tarsi is very long.



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### 122. **Agrilus squalus.**

Niger, nitidus; capite antice æneo, medio impresso; thorace disco fere lævi, latera versus punctulato, disco longitudinaliter canaliculato, angulis posticis inflatis; elytris sat fortiter punctatis, maculis quatuor parvis albis notatis, ad apicem divergentibus denticulatis.
Long. $4\frac{1}{2}$–$5\frac{1}{2}$ lin.

*Hab.* Mexico, Campeche (*Sallé*), Tapachula in Chiapas (*Höge*); Guatemala, near the city, Zapote (*Champion*); Honduras (*Sallé*); Costa Rica (*Sallé*).

The thorax has the discoidal impression nearly as smooth as the rest of the disc; the posterior ridge is represented by an oval swelling. The elytra have the subcosta not very distinct; the punctuation is rather strong, not very close, and equally distributed over the surface; each elytron has a small white spot near the side behind the middle and another close to the suture at a short distance from the apex.

This species was received with the name *A. squalus*, Chevr., attached to it, but it appears to be undescribed.

### 123. **Agrilus stellatus.** (Tab. VII. fig. 1.)

Æneo-auratus, nitidus; capite fortiter punctato, longitudinaliter fortiter impresso; thorace fortiter punctato, medio canaliculato-impresso, angulis posticis inflatis; elytris sat fortiter punctatis (punctis triangularibus), maculis parvis sex albis notatis, apice denticulato.
Long. 5 lin.

*Hab.* Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*).

The head has the punctures moderately close together but crowded; the impression is deep, narrow posteriorly, the space between the impression and the eye convex. The thorax is narrowed in front as if compressed; the punctures are not crowded together; the discoidal impression is not very deep, but well marked. The elytra are convex at the base, the sutural area impressed posteriorly leaving a moderately well-marked subcosta; the punctures are distinctly separated from each other, distinct, except at the suture below the scutellum, where the surface is smoother; each elytron has three very small nearly white spots—one just before the middle, inside the subcosta; the second behind the middle, outside the subcosta; the third halfway between the second and the apex, inside the subcosta. The prosternal process is gently convex, finely punctured, the punctures not very close together. The metasternum is nearly smooth in the middle. The metathoracic episterna are closely and moderately finely punctured. The abdomen is finely and moderately thickly punctured, densely and rather roughly punctured at the sides of the basal segment.

The foregoing description is taken from the Nicaraguan specimen. The example from San Gerónimo is a little larger than the type (6 lines); it has the head not green, but more coppery; the punctures on the raised part of the disc finer; the elytra less acute at the apex, the apex of each being rounded; and the spots pure white.

These differences are probably sexual.

## 124. **Agrilus glabratus.**

Elongatus, depressus, æneus, glaber, elytra fere nigra; capite sulcato; thorace tenuiter haud crebre punctato, medio leviter impresso; elytris tenuiter haud crebre punctatis, postice attenuatis, apice denticulato; abdomine margine superiore maculis quatuor parvis albis ornato.
Long. 6 lin.

*Hab.* GUATEMALA, Coban in Vera Paz (*Conradt*).

The head is inclined, punctured, the punctures not crowded together; the longitudinal impression is rather deep, extending from the top of the head to a short distance above the clypeus, transversely rugulose at the lowest part. The thorax is smooth, obscurely and not very closely punctured, narrowed in front, broadest just before the hind angles, where there is a round swelling, on the inner side of which is a deep round fovea; the median impression is very shallow and not well defined. The elytra are somewhat irregularly punctured, the punctures not very close together—one example has the punctuation very obscure and the subcosta much less distinctly marked; the apices are separately rounded and evenly denticulate. The prosternal chin-piece is gently and widely emarginate. The prosternum is not closely punctured; the intercoxal process is a trifle widened behind the coxæ, and then arcuately narrowed, almost rounded; the central process is at a lower level. The episterna are punctured, the punctures not crowded together, with a line of pubescence on the outer margin. The abdomen has the lateral carina of the basal segment much thickened, slightly interrupted behind the middle.

This species somewhat resembles *A. squalus*, but is without the dilated apex to the elytra.

## 125. **Agrilus prionurus.**

*Agrilus prionurus*, Chevr. Silberm. Rev. Ent. v. p. 95 (1837)[1].

*Hab.* MEXICO[1] (*Vasselet, in coll. Sallé*).

The type-specimen of this insect (the only one known to me) differs from the foregoing species in being larger; in having the head nearly black instead of bronzy-green; the elytra slightly tinted with bronze instead of being black and with a slightly more evident subcosta; and the punctures on the prosternum a little closer together. These differences may be specific or sexual.

## 126. **Agrilus incertus.**

*Stenogaster incertus*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 138 (1835)[1].

*Hab.* MEXICO[1], Playa Vicente (*Sallé*).

This is a peculiar species, having no impression on the disc of the thorax, and scarcely any trace of a subcosta on the elytra. The thorax has the posterior ridge fairly well marked, curved. The punctuation on the underside of the body is fine;

the punctures on the sterna rather widely separated, those on the abdomen a little closer together.

Chevrolat's type is now in the British Museum.

### 127. **Agrilus simplicicollis.** (Tab. VII. fig. 2.)

♂. Sat depressus, nitidus; capite antice aureo-viridi, sat fortiter punctato, medio longitudinaliter sulcato, vertice purpureo-nigro, subtiliter punctulato; thorace leviter convexo, purpureo-nigro, subtiliter discrete punctulato; scutello lævi; elytris sat crebre evidenter punctatis, cyaneo-nigris (regione suturali ænescente, apice purpurascente, lævi), maculis sex parvis albis notatis; corpore subtus æneo; prosterno crebre punctato; abdomine subtiliter discrete punctulato, segmento ultimo medio longitudinaliter lævissime impresso.
Long. $4\frac{1}{4}$ lin.

♀. Paullo latior; capite antice cyaneo; corpore subtus cyaneo-nigro; prosterno minus crebre punctato; abdomine medio fere lævi, segmento ultimo haud impresso.
Long. $4\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Teleman in Vera Paz (*Champion*).

This species is closely allied to *A. prionurus*, but is distinguished by the elytra having a distinct subcosta and by the two white spots near the apex being directed towards the suture anteriorly, while in *A. prionurus* they are nearly parallel or directed outwards anteriorly. The metathoracic episterna are smooth on the inner margin, closely and finely punctured on the outer margin. The prothoracic episterna are clothed with nearly white pubescence and there is a somewhat large whitish spot on the side of the third abdominal segment.

The female example has a small white spot at the side of the elytra, rather behind the middle.

### 128. **Agrilus quadrimaculatus.** (Tab. VII. fig. 3.)

Æneus, nitidus; capite vertice subtiliter discrete punctulato, antice crebrius fortius punctato, medio sulcato; thorace disco æneo-nigro, tenuiter punctato, leviter bi-impresso, lateribus sat profunde impressis, macula flava ornatis; elytris cyaneo-æneo-nigrescentibus, sat crebre evidenter punctatis, maculis quatuor aureo-flavo-pubescentibus ornatis; prosterno ruguloso; metasterno sat crebre subtiliter punctulato; episternis intus lævibus, extus crebre subtiliter punctulatis; abdomine sat crebre subtiliter punctulato.
Long. 5 lin.

*Hab.* BRITISH HONDURAS (*Blancaneaux*); GUATEMALA (*Brit. Mus.*).

Closely allied to *A. prionurus*, but of different form and colour, and distinguished moreover by the two shallow but distinct impressions on the disc of the thorax. The impression on the front of the head is not very deep, and occupies about one third the width; the punctures immediately above the clypeus are united by short curved lines. The thorax has at the posterior angles a short, smooth, oblique ridge. The elytra are somewhat deeply impressed at the base, the impression being rugose and marked with a spot of golden pubescence; the subcosta is not very strongly marked.

### 129. **Agrilus sexmaculatus.** (Tab. VII. figg. 4, 4 *a*.)

Sat latus, parum convexus, æneus, nitidus, supra cupreus vel æneus; capite crebre fortiter punctato, antice impresso; thorace sat crebre fortiter punctato, medio fortiter impresso, impressione basi lata; elytris crebre fortiter subrugoso-punctatis, maculis sex flavis ornatis, duabus exterioribus parvis inconspicuis.
Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Guanajuato, Etla (*Sallé*), Cuernavaca in Morelos (*H. H. Smith*).

The head is arched downwards; the median impression is rather broad in front, narrowed on the vertex. The thorax has the median impression very deep, broadest immediately above the base, narrowed in front, scarcely extended to the front margin; there is a swelling at the posterior angles, with a slight impression behind it at the base; the punctures on the disc are generally a little separated from each other (fig. 4). The elytra have the subcosta moderately well marked; each has two slightly elongate-ovate spots in the sutural area, one at one third from the base and the other at one third from the apex; halfway between these, but outside the subcosta, a very small spot may be traced. The prosternal chin-piece is very short, deeply emarginate; the prosternum is not very strongly nor closely punctured, and not pubescent; the intercoxal process is slightly convex in the middle, gently impressed at the sides and apex, the apex obliquely and arcuately narrowed. The epipleura are finely and moderately closely punctured, slightly pubescent on the outer half. The abdomen is very finely punctured; the lateral carina of the basal segment is distinctly curved and slightly angular in the middle and curved at the apex, with a yellowish spot above each curve (fig. 4 *a*); the second and third segments have similar spots.

### 130. **Agrilus fossiger.** (Tab. VII. figg. 5, 5 *a*.)

Elongatus, æneus, nitidus, capitis vertice thoracisque disco cupreis; capite tenuiter punctato, antice profunde canaliculato; thorace tenuiter punctato, basi fovea rotundata sat profunde impresso; elytris purpureo-nigris, sat crebre punctatis, apice denticulato.
Long. 5 lin.

*Hab.* Mexico, Vera Cruz (*Sallé*).

The head is very much inclined, finely and moderately closely punctured. The thorax is rather finely punctured, the punctures distinctly separated from each other; in the middle of the base there is a deep, round, smooth impression, not quite reaching to the middle of the disc; there is a swelling at the posterior angles. The elytra are nearly black, rather strongly punctured with cuneiform punctures, which are slightly separated from each other, but sometimes touch in a transverse direction; the subcosta is fairly well marked; the apex of each elytron is rounded and finely denticulate. The prosternal chin-piece is very slightly sinuate, almost straight. The prosternum is moderately strongly and not very closely punctured; the intercoxal process with slightly thickened margins, obliquely narrowed at the apex. The episterna are moderately closely punctured, with a little pubescence on the outer side. The abdomen is finely

punctured; the lateral carina of the basal segment is nearly rectilinear posteriorly (fig. 5 *a*).

### 131. **Agrilus chrysophanus.**

*Agrilus chrysophanus*, Gory, Mon. iv. p. 212, t. 35. fig. 202 [1].

*Hab.* Mexico [1], Cordova (*Sallé*).

### 132. **Agrilus aureoviridis.** (Tab. VII. figg. 6, 6 *a*.)

Aureo-viridis, nitidus; capite inclinato, rugoso, medio impresso; thorace fortiter punctato, basi medio foveata, angulis posticis inflatis; elytris crebre asperato-punctatis, punctis cuneiformibus.

Long. $4\frac{2}{3}$ lin.

*Hab.* Mexico, Etla (*Sallé*), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

The head is rugose, with a slight impression above the clypeus and a larger triangular not well-defined one on the forehead. The thorax is strongly punctured, the punctures being placed close together so as to form shorter or longer curved lines, leaving narrow spaces between the lines; the median impression is rather deep, moderately broad at the base, narrowed anteriorly, extending a little beyond the middle of the disc. The elytra have the subcosta slightly marked; the punctures are cuneiform, not crowded, but often touching each other in a transverse direction; at one quarter from the base a slight pubescent spot may be traced just within the subcosta and another (rather longer) at about one third from the apex, both being indistinct; the apex of each elytron is rounded and finely serrulate. The prosternal chin-piece is rather deeply emarginate. The prosternum is strongly and not very closely punctured; the intercoxal process is scarcely convex, obliquely narrowed at the apex. The episterna are closely punctured, with a very narrow line of pubescence on the outer edge. The abdomen is finely punctured; the lateral carina of the basal segment is distinctly sinuous about the middle, slightly so at its apex, with a yellowish-grey spot above each curve (fig. 6 *a*).

### 133. **Agrilus perlucidus.**

*Agrilus perlucidus*, Gory, Mon. iv. p. 217, t. 36. fig. 208 [1].

*Hab.* Mexico [1], Cuernavaca (*Sallé*), Soledad 5500 feet, and Omilteme 8000 feet in Guerrero (*H. H. Smith*).

According to a specimen compared with Gory's type by Mr. Edward Saunders, this species is quite distinct from *A. aureus*, with which it is associated in the Munich Catalogue. The lateral carina of the basal segment of the abdomen is nearly rectilinear posteriorly, whilst it is distinctly interrupted by a notch behind the middle in *A. aureus* &c.

The specimens from Cuernavaca differ from Mr. Saunders's example in being a little less dull, and they have the subcosta of the elytra slightly smooth; they bear the name "*A. rugicollis*, Sturm."

### 134. **Agrilus restrictus.** (Tab. VII. figg. 7, 7 *a*.)

Cyanescenti-viridis, sat depressus, parum nitidus; thorace fortiter punctato, medio sulcato; elytris confertim asperato-rugosis.

Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

The head is somewhat arched downwards, closely and coarsely punctured, slightly longitudinally impressed. The thorax is very strongly punctured, the punctures slightly separated from each other on the disc; the sides are gently arcuate; the surface is lightly impressed on each side at the front margin; the lateral impression extends somewhat on to the disc; there is a swelling at the posterior angles with a round fovea behind it close to the base; the discoidal impression is broadly ovate behind, narrowed in front. The scutellum is deeply impressed in the middle. The elytra have the subcosta fairly well marked; the rough sculpture is even and very coarse. The prosternal chin-piece is slightly angularly emarginate. The prosternum is rather strongly and closely punctured, not pubescent; the intercoxal process with its margins slightly raised; the apex is very obliquely narrowed, having the central process at a slightly lower level. The episterna are rugosely punctured, slightly pubescent on the outer half. The abdomen is moderately strongly punctured, slightly wrinkled at the sides; the lateral carina of the basal segment with a slight but distinct curve about the middle and at the apex, with a yellowish-grey pubescent spot above each curve (fig. 7 *a*).

### 135. **Agrilus delectabilis.** (Tab. VII. fig. 8.)

Sat latus, depressus, cyaneo-viridis vel viridi-aureus, nitidus; capite crebre fortiter punctato, medio sulcato; thorace sat crebre fortiter punctato, medio sat late sulcato; elytris sat crebre subasperato-punctatis, guttis sex parvis albis notatis, apice serrulato.

Long. $4\frac{1}{2}$–5 lin.

*Hab.* Nicaragua, Chontales (*Belt*, *Janson*).

The head has the surface rather uneven; the median channel is rather deep and wide, but well defined. The thorax is rather strongly punctured and the punctures are distinctly separated from each other; the median channel in some lights appears divided in the middle, the posterior part being a little larger than the anterior, and the punctures in the impression are close together and arranged in curved lines or circles; the posterior ridge is represented by a swelling, on the inner side of which (close to the base) there is a small deep fovea (fig. 8). The elytra have the subcosta distinct and shining; the punctures are triangular, generally separated from each other, especially near the suture and below the scutellum, where the surface is smoother; each elytron has three small white spots—one just before the middle, another at some distance from the apex, and the third halfway between these but outside the subcosta. The prosternal chin-piece is very gently emarginate. The prosternum is rather strongly

punctured, the punctures separated from each other; the intercoxal process is slightly convex, narrowed and rounded at the apex. The episterna are closely punctured, with some pubescence on the outer half. The abdomen is finely and not very closely punctured; the division between the true first and second segments is marked by an impressed pubescent line at the sides; the lateral carina is very slightly sinuous at this point (with a pubescent spot above), as it is also at the apex of the second and third segments.

### 136. **Agrilus brunnipennis.** (Tab. VII. fig. 9.)

*Agrilus brunnipennis,* Chevr. Silberm. Rev. Ent. v. p. 96 [1].

*Hab.* Mexico, Tuspan (*Sallé* [1]).

### 137. **Agrilus fossulatus.** (Tab. VII. figg. 10, 10 *a*.)

Elongatus, sat depressus, nitidus, æneus; capite crebre fortiter punctato, linea mediana impressa; thorace minus crebre fortiter punctato, medio canaliculato, canaliculo postice dilatato; elytris postice gradatim angustatis, crebre fortiter punctatis, singulo costa sublævi instructo.

Long. $5\frac{1}{2}$ lin.

*Hab.* Mexico, Guanajuato (*Sallé*).

The thorax is strongly and evenly punctured, the punctures slightly separated from each other; the median channel is deep, transversely dilated just before the base; the posterior ridge is represented by a considerable swelling, on the inner side of which, close to the base, there is a deep round fovea. The elytra have the subcosta strongly marked, shining, as is also the suture; the punctuation is rather closer in the sutural area than on the rest of the surface; the punctures are triangular, slightly asperate. The prosternal chin-piece is gently emarginate. The prosternum is strongly punctured, the punctures not crowded; the intercoxal process is scarcely convex, obtusely angular at the apex. The episterna are clothed with yellowish-grey pubescence on the outer half, the inner half being rather finely punctured, the punctures not crowded. The abdomen is finely and not very closely punctured; the line dividing the true first and second segments is strongly marked at the sides; the lateral carina is distinctly flexuous at the apex of the first, second, and third segments (fig. 10 *a*).

This species much resembles *A. brunnipennis*, but the discoidal channel of the thorax is more angularly dilated posteriorly, and the fovea within the posterior swelling is deeper. The elytra have the subcosta much more prominent, and the punctuation is closer and rougher. The lateral carina of the basal segment of the abdomen is flexuous; it is only very slightly so in *A. brunnipennis*.

### 138. **Agrilus aurilatera.**

Crassus, parum nitidus, cyanescenti-æneus; thorace crebre fortiter punctato, medio sulcato; elytris sat crebre asperato-punctatis, lateribus late cupreis vel auratis; corpore subtus pube flavo-grisea dense vestito.

Long. $5\frac{1}{2}$–$6\frac{1}{2}$ lin.

*Hab.* Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Guanajuato (*Sallé*).

The head is closely rugose, impressed in front. The thorax is strongly and closely punctured, but the punctures are slightly separated on the disc; the median channel is deep, rather more narrowed in front than at the base; there is a slight swelling at the posterior angles; the sides are rather straight. The elytra have the subcosta slightly marked, and between it and the suture there is a less definite, fine, shining, raised line; the punctures are somewhat cuneiform, generally a little separated from each other, those in the sutural region being finer and closer than those at the sides. The prosternal chin-piece is gently and widely emarginate. The prosternum is rather closely and strongly punctured; the intercoxal process obliquely narrowed at the apex, where it is deflexed. The episterna are closely punctured. The abdomen is very finely punctured and densely so at the sides; the basal segment has an impressed line at the sides indicating the division between the first and second segments; the lateral carina has a distinct curve before the apex of each of the basal segments. The whole of the upperside of the insect is slightly pubescent. The whole of the underside is more or less clothed with yellowish-grey pubescence: it is sparse in the central parts, but close and longer at the sides.

### 139. **Agrilus phænicopterus.**

Elongatus, crassus, postice parum angustatus, nitidus, rufo-cupreus, vel viridis, vel cyaneus; capite rugoso, fronte impressa; thorace subquadrato, fortiter punctato, medio profunde canaliculato; elytris crebre subrugoso-punctatis, costatis.
Long. $4\frac{1}{2}$ lin.

*Hab.* Mexico, Cordova, Tuxtla, Juquila (*Sallé*), Mexico city (*Höge*).

The head is longitudinally impressed in front, and has a transverse impression on the forehead. The thorax is not more narrowed at the base than in front; the punctures are strong, close together at the sides, but on the disc they are distinctly separated from each other; the median channel is deep, with some golden pubescence at the bottom; there is an oblique lateral impression and a swelling at the posterior angles representing the posterior ridge. The elytra are somewhat parallel, narrowed at the apex; each elytron has two shining costæ, which do not extend to the apex. The prosternal chin-piece is rather straight in front, with a slight sinuosity in the middle. The prosternum is strongly punctured, shining, the punctures not crowded; the intercoxal process is slightly arched posteriorly, rounded at the apex. The sides of the sternum are sparsely pubescent. The episterna are almost without pubescence, shining, convex, finely and closely punctured. The abdomen is finely and not very closely punctured; the basal segment has an impressed transverse line at the sides indicating the division between the true first and second segments; the upper margin has four shallow impressions, which are filled with whitish pubescence; the lateral carina of the basal segment is interrupted by the first and second impressions.

### 140. **Agrilus quadricostatus.** (Tab. VII. fig. 11.)

Elongatus, crassus, æneus (thorace elytrisque cupreis, illo medio fuscescenti), griseo-pubescens; thorace medio sulcato; elytris quadricostatis.
Long. 5 lin.

*Hab.* Mexico, Etla (*Sallé*).

This species differs from *A. phœnicopterus* in being clothed above with short grey pubescence, with the whole of the underside densely pubescent, except the middle of the sterna and middle of the episterna. The thoracic channel is rather wider, and the punctures on the disc are more separated. The elytra have the costæ more elevated, smooth, and longer, giving them a striped appearance. The abdomen has the lateral carina of the basal segment only slightly notched rather behind the middle; there are no distinct spots above.

### 141. **Agrilus subcostatus.** (Tab. VII. fig. 12.)

Viridi-cyaneus, nitidus; thorace medio sulcato, disco fere lævi, nigro; elytris rufo-cupreis, rugosis, costis quatuor parum elevatis rugosis; corpore subtus brevissime pubescenti.
Long. $3\frac{3}{4}$ lin.

*Hab.* Mexico (*Brit. Mus.*).

This species differs from the preceding in being much smaller; the disc of the thorax is almost smooth, the central channel deep and without pubescence. The elytra have each two costæ, but they are not very distinct (especially the inner one), and are roughly punctured like the rest of the surface. The pubescence on the under surface is short and less dense; the inner half of the episterna is bare.

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The following species had not been investigated when my remarks on the genus were written (p. 57), or are of doubtful position or locality:—

### 142. **Agrilus fosseicollis.**

*Agrilus fosseicollis,* Thomson, Typi Buprest., Append. p. 71[1].

*Hab.* Guatemala[1].

I am unable to locate this species.

### 143. **Agrilus rugosus.**

Crassus, subcylindricus, parum nitidus, æneus vel viridi-æneus, capite thoraceque plerumque cyanescentibus, hoc confertim fortiter punctato, medio sulcato; elytris rufo-cupreis, rugosis, singulis bicostatis.
Long. $3\frac{1}{2}$–4 lin.

*Hab.* Mexico, Capulalpam, Parada, Oaxaca (*Sallé*).

Very close to *A. aurilatera*, but rather smaller, with more unicolorous elytra, which are also more closely rugose. The thorax is a little narrowed before the posterior angles;

the median channel slightly interrupted in the middle, and the punctuation stronger, the punctures crowded together on the disc.

### 144. **Agrilus baroni.**

*Agrilus baroni*, Lap. & Gory, Mon. ii. p. 23, t. 5. fig. 27[1].

*Hab.* Mexico ??

Gory states[1] that the specimen he describes was without locality, but was believed to be from Mexico.

### 145. **Agrilus (?) rufocentralis.**

*Agrilus rufocentralis*, Thomson, Typi Buprest. p. 89[1].

*Hab.* Mexico[1].

"An hujus generis dubito."—*Th.*

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The following differs from all the species of *Agrilus* known to me in having a lateral carina to the elytra similar to that in *Paragrilus*; the basal joint of the posterior tarsi is rather short. I am doubtful whether this species should be included in *Agrilus*.

### 146. **Agrilus (?) dissimilis.** (Tab. VII. fig. 13.)

Elongatus, nitidus, viridis; thorace viridi cyaneo-variegato, crebre evidenter punctato, basi trifoveolata; elytris crebre subasperato-punctatis, ad basin viridibus, dimidio apicali purpureo-cupreo vel æneo, apice ipso plerumque viridi, lateribus carina usque ad medium instructis.

Long. $3\frac{1}{4}$–4 lin.

*Hab.* Mexico, Playa Vicente (*Sallé*).

The head is moderately closely punctured, with a narrow median channel. The thorax is transversely quadrate, slightly narrowed towards the base, moderately convex, with a fovea inside the posterior ridge and a deeper one in the middle of the base; the posterior ridge is distinct, curved down to the margin. The elytra have a very slightly marked subcosta; the lateral ridge extends from the shoulder to about the middle; the obscure purple or æneous colour sometimes occupies the apical half and sometimes extends nearly to the base; the apex is very finely serrate. The prosternal chin-piece is widely but gently emarginate. The prosternum is moderately closely punctured; the intercoxal process is gently convex in the middle, with narrow impressed margins, truncate at the apex. The episterna are smooth and shining, rather strongly and not very closely punctured.

The smaller specimen differs from the others in having the thorax entirely green, with the posterior ridge longer, and extended more forward, reaching the margin beyond the middle instead of about one third from the base.

## PARAGRILUS.

*Clinocera,* Deyrolle, Ann. Soc. Ent. Belg. viii. p. 116 (1864) (nom. præoc.).
*Paragrilus,* Saunders, Cat. Buprest. p. 127 (1871).

It is to be regretted that in Gemminger and Harold's catalogue, and also in Capt. Kerreman's supplementary list of Buprestidæ, this genus is confounded with *Agrilus*.

It is a well-defined genus, especially by the antennæ, when at rest, being received into a groove in the under flanks of the thorax. The known species are all Central or South American, ranging from Mexico to Monte Video.

### 1. **Paragrilus lævicollis.**

Elongatus, sat angustus, depressus, supra obscure cyaneus, surdus, subtus niger, nitidus; capite convexo, nitido, medio sulcato; thorace trapezoidali, basi trifoveolata; elytris opacis, sparsim asperato-punctatis, parallelis, ad apicem paullo angustatis.
Long. 3 lin.

*Hab.* Panama, Bugaba (*Champion*).

This species is allied to *P. impressus* (Chevr.), but is rather larger, and uniform dark steel-blue above. The thorax is almost impunctate, and the elytra are much less closely punctured. The head is rather deeply impressed in the middle.

### 2. **Paragrilus impressus.**

*Aphanisticus impressus,* Chevr. Col. Mex. Cent. ii. fasc. 6, no. 145 (1835)[1].

*Hab.* Mexico, Alvarado[1], Tuxtla (*Sallé*).

### 3. **Paragrilus angulaticollis.** (Tab. VII. fig. 19.)

Elongatus, depressus, supra surdus, niger; capitis vertice æneo, medio inciso; thorace brunneo-cupreo, ante angulos anticos bene angulato, postice angustato; elytris obsolete striato-punctatis, tenuiter granulosis.
Long. $2\frac{3}{4}$ lin.

*Hab.* Mexico, Tapachula in Chiapas (*Höge*).

The head is yellowish-brassy, densely and extremely finely punctured, longitudinally sulcate, the vertex (when viewed from above) appearing triangularly excised. The thorax is very broad just behind the anterior angles, obliquely narrowed in front of the lateral angulation, gradually narrowed posteriorly; the disc is lightly impressed in front and behind the middle, and there is a shallow impression at the side; at the base there are two foveæ at some distance from the posterior angles. The elytra are dull black, with closely placed lines of large, but obscure, punctures extending to rather beyond the middle; between the lines of punctures there are series of minute shining dots, which are also scattered over the dull apical region.

Paragrilus costaricensis Obenberger
" aureositer. "
Costa Rica (Surubres 300')
<1919, Ent. Mitteil, vol. VIII, p. 21-22>

### 4. **Paragrilus trifoveolatus.**

Æneus, parum nitidus; capite sulcato; thorace paullo rugoso, basi trifoveolata, lateribus flexuosis, angulis posticis inflatis; elytris creberrime sat fortiter rugosis.
Long. 2–2⅓ lin.

*Hab.* Mexico, Vera Cruz (*Sallé*), Teapa in Tabasco (*H. H. Smith*).

This is a distinct species and recognizable by its uniform brassy colour and rather rugose surface. The head has the surface finely coriaceous and rather strongly punctured, and the punctures are slightly separated from each other; viewed from above the vertex is rather more notched in the middle than in *P. impressus*, but not so much so as in *P. angulaticollis*. The thorax is angulated at the sides just behind the anterior angles, but the angulation is more rounded, and the sides posteriorly are more flexuous; the disc has a very short fine line in the middle. The elytra are uniformly somewhat coarsely rugose.

### 5. **Paragrilus exiguus.**

*Aphanisticus exiguus*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 146[1].

*Hab.* Mexico[1], Acapulco in Guerrero (*Höge*).

The type of this species in the British Museum is of a slightly brassy tint, with the elytra tinted with purple. The thorax is somewhat cylindrical, parallel sided, with some short transverse impressed lines, but not transversely rugulose. The elytra are somewhat shining, especially at the apex, rather closely punctured, with a very light transverse impression across the middle, and with no second transverse impression before the apex; the apical area is distinctly punctured, the punctures well separated from each other.

### 6. **Paragrilus rugatulus.**

*Paragrilus rugatulus*, Thomson, Typi Bupr., Append. p. 74[1].

Differs from the type of *P. exiguus* in having the thorax transversely rugulose, and the elytra rather more uneven. The specimens are often of a blackish colour.
Length 1½–2 lines.

*Hab.* Mexico[1], Ventanas in Durango, Cuernavaca in Morelos, Chilpancingo and Tierra Colorada in Guerrero (*H. H. Smith*), Jalapa, Oaxaca (*Höge*), Orizaba (*Sallé*); Guatemala, San Gerónimo (*Champion*); Panama, Bugaba (*Champion*).

The extent to which the thorax is rugulose varies considerably, even in specimens from the same locality. If I am correct in identifying the specimens from the above-mentioned localities as *P. rugatulus*, I think it open to question whether it is more than a variety of *P. exiguus*.

### 7. Paragrilus transitorius.

*P. exiguo* affinis, differt tamen corpus magis purpureum, minus nitidum; elytris cyanescentibus, vage punctatis.
Long. 2–2$\frac{1}{6}$ lin.

*Hab.* Mexico, Cordova (*Sallé*), Teapa in Tabasco (*H. H. Smith*), Tapachula in Chiapas (*Höge*); Guatemala, Zapote, San Gerónimo, San Juan in Vera Paz (*Champion*); Panama, Bugaba (*Champion*).

This species is doubtfully distinct from *P. exiguus*. The series, however, from the above localities differ from the type in being of a less brassy colour, generally dark purple, with the elytra dark steel-blue. They are relatively a trifle broader, the thorax dull and faintly punctured. The elytra are punctured, but the punctuation is vague, and at the apex there are scarcely any punctures to be distinguished.

### 8. Paragrilus vicinus.

Nigro-cyaneus, paullo nitidus; capite obscure æneo, sat crebre punctulato, medio canaliculato, fronte biconvexa; thorace convexo, ante medium leviter angustato, transversim striolato, tenuiter ruguloso, basi plerumque purpureo tincta; elytris obsolete punctatis, regione suturali medio et ante apicem leviter impresso, apice leviter gibboso.
Long. 2 lin.

*Hab.* Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

This species much resembles the preceding, but is of a more decided dark steel-blue. It differs in having the thorax slightly narrowed in front, and transversely striolate, each stria having a small puncture. Each elytron has at the apex an elongate ovate swelling.

### 9. Paragrilus lesueuri.

Brunneo-niger (vel cupreo-niger), parum nitidus; capite sat crebre punctulato, fronte biconvexa; thorace obsolete punctato, disco ante medium puncto elongato impresso, basi quadrifoveolata; elytris post medium paullo ampliatis, striato-punctatis, ad apicem leviter gibbosis.
Long. 1$\frac{2}{3}$–2$\frac{1}{4}$ lin.

*Hab.* Mexico, Jalapa (*Höge*), Tuxtla, Yolos, Cordova, Puebla, Jacale, Juquila, Teapa (*Sallé*), Atoyac in Vera Cruz, La Venta 300 feet, and Tepetlapa 3000 feet, in Guerrero (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

This species is generally a little larger than the preceding, and of a brownish tint. The thorax is broad, rather less convex, with a shallow, elongate impression on the disc; near the base there are some curved impressed punctured lines, but these are often obscure. The surface of the elytra is uneven; in the sutural area there is a slight impression at the middle, and before the middle a larger one, leaving the apex distinctly convex.

The examples from Teapa and one from Temax are of a more coppery tint than the others.

### 10. **Paragrilus æraticollis.**

Minus elongatus, parum convexus, sat nitidus, nigro-æneus; capite thoraceque æneis, illo sulcato, in mare aureo-pubescenti, hoc basi quadrifoveata; elytris striato-punctatis.
Long. 2 lin.

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith, Sallé*); British Honduras, R. Hondo (*Blancaneaux*); Panama, Bugaba, David in Chiriqui, Taboga I. (*Champion*).

The head is finely coriaceous, with not very distinct punctures placed moderately close together; in the male the face is covered with golden-yellow pubescence radiating from a spot in the centre. The thorax is convex, densely and finely coriaceous, with numerous scarcely raised dots, which are only visible in certain lights; there is an oval swelling at the posterior angle, with a curved impression (in which there is a white line) bordering it on the inner side; at the base there are two punctiform impressions close together in the middle, and a fovea on each side. The elytra are somewhat shining, the surface rather undulating or uneven, with some lines of very obscure punctures.

## TAPHROCERUS.

*Taphrocerus*, Solier, Ann. Soc. Ent. Fr. ii. p. 314 (1833).

Species of this genus have been described from North and South America and from Cuba.

The Central-American species may be divided as follows:—

I. Elytra with a lateral carina . . . . . Species 1–3.
II. Elytra without lateral carina.
  *a*. Elytra more or less spotted with white. . . . . Species 4–6.
  *b*. Elytra without spots . . . . . Species 7–9.

### 1. **Taphrocerus costatus.**

Æneus, nitidus; thoracis lateribus basique pube grisea sparsis; elytris purpurascentibus, dimidio basali crebre punctato, apicali fere lævi, medio maculis tribus fasciaque ante apicem albis ornatis, lateribus carinatis
Long. $2\frac{1}{5}$ lin.

*Hab.* Mexico, Cordova (*Sallé*); Guatemala, Coban in Vera Paz (*Conradt*).

The head is longitudinally canaliculate in front, with a few hair-bearing punctures at the upper part of the channel; there is a transverse band of golden pubescence across the clypeus. The thorax is narrowed in front and slightly at the base, the sides rounded; the large impression at the posterior angles is rather closely marked with large round shallow punctures, each puncture having a decumbent yellowish hair; there are some similar punctures at the sides and near the front margin. The elytra are long, rather flat, rather strongly sinuate below the shoulders, as broad at the middle as at the humeral angles, narrowed beyond the middle to the apex; each elytron has

five lines of strong, large punctures which extend to about the middle (the lines are, however, rather vague and irregular), and between the fifth line and the lateral costa (which is strongly marked) there are two more lines of smaller punctures ; there is a little white pubescence near the scutellum, two indistinct spots at a short distance from the base, three more evident ones placed in a triangle at the middle, and a rather broad white fascia before the apex; the margin has two white spots.

### 2. **Taphrocerus fasciatus.**

Æneus, nitidus; elytris dimidio basali striato-punctatis, ante apicem fascia alba ornatis, lateribus costatis. Long. $1\frac{2}{3}$ lin.

*Hab.* PANAMA, Caldera in Chiriqui 1200 feet (*Champion*).

This species differs from *T. costatus* in being much smaller, and in having fewer punctures on the thorax. The elytra have the punctures in the basal region more distinctly arranged in lines; there are a few white hairs across the middle, which in a fresh specimen might form spots or a band, and the lateral costa, instead of being sinuous and following the curves of the side of the elytron, is almost straight for half its length and parallel to the suture.

### 3. **Taphrocerus nigritulus.**

Niger, nitidus; elytris dimidio basali striato-punctatis, medio guttis duabus fasciaque ante apicem albis ornatis, lateribus costatis. Long. $1\frac{1}{2}$ lin.

*Hab.* PANAMA, San Miguel in the Pearl Islands (*Champion*).

This is a more convex and cylindrical species than either of the foregoing. The head is relatively larger and more prominent. The thorax has a few punctures in the basal impressions. The elytra are less sinuate below the shoulders, so that they are not so angulated at the middle; the basal region is punctured in lines, the apical half nearly smooth ; the lateral carina is slightly flexuous and follows the curves of the margin.

### 4. **Taphrocerus mexicanus.**

Sat latus, æneus, nitidus; elytris purpurascentibus, striato-punctatis, ad apicem lævibus, medio maculis tribus fasciaque ante apicem albis ornatis. Long. $1\frac{3}{4}$–$1\frac{7}{8}$ lin.

*Hab.* MEXICO, Guanajuato (*Sallé*), Tepetlapa 3000 feet, and Xucumanatlan 7000 feet, in Guerrero, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Chiacam, Tamahu, and Purula in Vera Paz, Dueñas (*Champion*).

The head and thorax are shiny brassy, the latter with large shallow punctures placed rather close together in the basal impressions. The elytra are not very convex, subparallel for half their length (gently sinuate below the shoulders), and then obliquely

narrowed to the apex, which is obtuse and serrulate; each elytron has several lines of rather strong punctures, the lines varying somewhat in length, but seldom extending beyond the middle, where there are generally three white pubescent spots, the middle one of which is a little above the others; at a short distance from the apex there is a transverse brassy punctured spot, more or less covered with white pubescence.

### 5. **Taphrocerus guttatus.**

Niger, nitidus; elytris basi striato-punctatis, gutta subbasali, fascia mediana altera subapicali albis ornatis.
Long. $1\frac{3}{4}$ lin.

*Hab.* GUATEMALA, San Juan in Vera Paz (*Champion*).

This species exactly resembles *T. nigritulus*, but has no lateral carina to the elytra.

A specimen from Volcan de Chiriqui and another from Caldera, captured by Mr. Champion, have the middle band of the elytra represented by two white spots; and an example from Bugaba, Panama, has only one spot.

### 6. **Taphrocerus psilopteroides.**

Æneus, nitidus; capite lato; elytris basi striato-punctatis, vix purpurascentibus, fascia mediana paullo angulata alteraque ante apicem æneis, punctatis, griseo-albo-pilosis ornatis.
Long. $1\frac{1}{2}$ lin.

*Hab.* MEXICO, Cuernavaca in Morelos (*H. H. Smith*); GUATEMALA, Chiacam and San Gerónimo in Vera Paz (*Champion*); PANAMA, Taboga I. (*Champion*).

This species is the most cylindrical of this group. It is a little shorter and narrower than *T. guttatus*. The head is very broad and the thorax is consequently a little less narrowed in front, and the posterior angles are a little less prominent. The elytra have the shoulders a little less angular, the sinuosity below the shoulders less marked, and the angulation at the middle less pronounced; the lines of punctures are rather close together and fairly regular; there is a small quadrate impression close to the suture at one third from the base, and two brassy fasciæ, one at the middle and the other near the apex, both slightly covered with greyish-white pubescence.

I have taken the above description from the example from Chiacam. The specimen from Cuernavaca may possibly belong to a different species; it measures $1\frac{3}{4}$ lines in length, and has the lines of punctures on the elytra continued beyond the middle to the subapical fascia.

### 7. **Taphrocerus purpureipennis.**

Æneus, nitidus; elytris purpureis, striato-punctatis, pube brevissima sparsis.
Long. $1\frac{3}{4}$ lin.

*Hab.* PANAMA, Taboga I. (*Champion*).

This species has very much the form of *T. mexicanus*, but is not quite so broad, and

the elytra are a trifle shorter. The head is sparingly punctured. The thorax is constricted in front, widened behind the middle, with rather large shallow punctures scattered over the surface, but placed more closely in the basal impressions and in the impression on each side of the front margin. The elytra are obscure purple, as broad just before the middle as at the shoulders and then obliquely narrowed to the apex, sinuate below the shoulders, with lines of punctures, which are large at the base, but gradually become smaller towards the apex, where they are not very distinct; each puncture bears a very short whitish hair.

### 8. **Taphrocerus communis.**

Æneus, nitidus; capite thoraceque parce punctatis; elytris striato-punctatis, calvis.
Long. $1\frac{3}{4}$ lin.

*Hab.* MEXICO, Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, San Juan, Chiacam, and San Gerónimo in Vera Paz (*Champion*).

This species exactly resembles *T. purpureipennis*, but is without the short white hairs in the punctures of the elytra. The specimen which I have taken for the type, from Atoyac, is uniform brassy. Most of the examples from San Gerónimo have the elytra more olive-æneous; whilst nearly all those from Chiacam are more coppery in colour, with the elytra bluish-purple at the base.

*Variety*? A series of specimens from Teapa in Tabasco (*H. H. Smith*) differ from the type in being smaller, $1\frac{1}{4}$–$1\frac{1}{2}$ lines in length; they also appear to average a little narrower. A series from Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), San Gerónimo and Tamahu in Vera Paz (*Champion*), Bugaba, Volcan de Chiriqui 3000 to 4000 feet, and Tolé in Panama (*Champion*), differ from the type in being decidedly more cylindrical in form, and in having the punctuation of the elytra a little stronger; they vary in length from $1\frac{1}{2}$–$1\frac{3}{4}$ lines. A specimen from Torola, Guatemala, and one from Teapa are somewhat intermediate.

### 9. **Taphrocerus uniformis.**

Olivaceo-æneus, nitidus; elytris striato-punctatis.
Long. 2 lin.

*Hab.* MEXICO, near the city (*H. H. Smith*).

The head is rather sparingly punctured. The thorax is somewhat constricted in front, widened posteriorly, but not so much as in *T. communis*, with the basal impressions punctured; near the posterior angles there is a short, obtuse, straight ridge, directed slightly inwards from the posterior angle. The elytra are striate-punctate, the lines of punctures reaching to the apex, but the punctures gradually diminish in size.

## TRACHYS.

*Trachys*, Fabricius, Syst. Eleuth. ii. p. 218 (~~1811~~ 1801).

The species described below appears to be undoubtedly congeneric with the European *Trachys troglodytes*, which it very much resembles. It is the only American species of the genus known to me.

### 1. Trachys segregatus.

Oblongo-ovalis, convexus, æneus, nitidus; capite parce punctato; thorace discrete punctato; elytris sat crebre punctatis.

Long. $1\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Coban in Vera Paz (*Champion*).

This species resembles *T. troglodytes* in many respects. It is, however, smaller and relatively narrower, and has the elytra longer and more gradually narrowed to the apex. The head is a little narrower, and has no median channel. The thorax is not quite so short, the sides more distinctly margined, and the posterior angles less diverging; the punctures are much smaller and not very close together. The elytra have the humeral callus more distinct and glabrous; the punctuation is irregular, and the punctures are much smaller, moderately close together. The under flanks of the prothorax have a few large shallow punctures occupying the greater part of the surface, and there are somewhat similar punctures scattered over all the underside of the insect.

## BRACHYS.

*Brachys*, Solier, Ann. Soc. Ent. Fr. ii. p. 312 (1833).

Species of this genus appear to occur throughout America. The following table may assist in determining the Central-American representatives:—

| | | |
|---|---|---|
| I. | Elytra with a lateral carina. | |
| | *a*. Elytra with tufts of hair | Species 1. |
| | *b*. Elytra without tufts of hair | Species 2–7. |
| II. | Elytra with the lateral carina interrupted at the middle | Species 8. |
| III. | Elytra without lateral carina | Species 9. |

### 1. Brachys floccosus.

*Brachys floccosa*, Mann. Bull. Mosc. viii. p. 118 (1837)[1].

*Hab.* MEXICO, Oaxaca[1], Juquila, Parada (*Sallé*); GUATEMALA, San Gerónimo, Capetillo, Cerro Zunil 4000 feet (*Champion*).

The example from San Gerónimo and another from Capetillo have the brush on the elytra entirely black; the specimen from Cerro Zunil agrees with the Mexican examples in having the basal portion of the brush ferruginous.

### 2. **Brachys ovatus?**

*Buprestis ovata,* Weber, Observ. Ent. p. 76 [1].

*Hab.* North America [1].—Mexico, Zacualtipan in Hidalgo (*Höge*).

A single example, which agrees in most of its characters with the North-American *B. ovatus*, but is decidedly narrower, and has the elytra more acuminate.

### 3. **Brachys scapulosus.**

*Brachys scapulosa,* Chevr. Silberm. Rev. Ent. v. p. 104 [1].

*Hab.* Mexico, Orizaba [1] (*Lesueur, Brit. Mus.*), Cordova (*Sallé*).

### 4. **Brachys anthrenoides.**

Cupreus, nitidus; elytris æneo-cyaneis, pube fulva vestitis, albo-maculatis, post medium plaga calva ornatis.
Long. $1\frac{1}{3}$ lin.

*Hab.* Panama, Bugaba, Volcan de Chiriqui 3000 to 4000 feet, Taboga I. (*Champion*).

The thorax is shining coppery, with some small punctures scattered on the front margin, and some large, very shallow, punctures placed rather close together in the basal impressions; these punctures bear fulvous hairs, except at the sides (especially at the front angles), where they are white, and there are two white spots in the middle of the base above the scutellum. The elytra are obscure steel-blue, with an elongate patch near the side, and the apex, coppery; each elytron has three fine lines of fulvous hairs, extending from the base to about the middle, the one next the lateral costa not so distinct; between each pair of lines there are two irregular lines of unequal punctures; the fulvous hairs form an indefinite patch on the shoulder, and a more distinct one next to the scutellum, a vague interrupted band across the middle, and they almost cover the apex; the white hairs form a spot near the base between the first and second fulvous lines; there is a small elongate white spot close to the suture at the middle; two rather larger white spots a little higher, above the central fulvous band, and a vague white spot close to the costa, below the band; and there is a transverse white spot before the apex; at the side beyond the costa there are three or four whitish spots.

The general form of this species is somewhat that of *B. ovatus*, but it is relatively a little narrower and has the elytra more acuminate. It is very close to *B. scapulosus*, but is smaller and more acuminate posteriorly.

We have also received single examples from Teapa in Tabasco (*H. H. Smith*) and Cerro Zunil and Chiacam in Guatemala (*Champion*) which appear to be referable to this species.

### 5. **Brachys distinctus.**

Elongato-ovatus, purpureo-cupreus, nitidus; thorace pube fulva sparso, disco maculis duabus calvis notato; elytris cyanescentibus, pube fulva et alba fasciatis.
Long. $1\frac{7}{8}$ lin.

*Hab.* GUATEMALA, San Isidro 1600 feet (*Champion*).

The thorax is marked with small punctures in front, and with large shallow punctures at the base; the surface is sprinkled with fulvous hairs (with a few white ones here and there), leaving two round approximate bare spots on the disc; at the base, close to the scutellum, there are two fulvous spots. Each elytron has two fine lines of fulvous hairs extending to about the middle, with a series of punctures on each side of the lines; the basal quarter is more or less covered with whitish hairs (with a few fulvous ones intermixed), leaving a small bare spot near the base; at the middle there is a well-marked, moderately broad fascia of fulvous hair (bordered above and below with white)—commencing at the lateral costa it slopes slightly upwards to the fine line of fulvous hair nearest to the suture, and then turns obliquely down to the suture; at a short distance from the apex there is a curved line of white hairs, widening out into a spot near the suture; the apex is covered with fulvous hair, bordered above with white hair.

This species is relatively longer than the preceding, with the head a little wider; it is not so angular at the shoulders, and the elytra are more gradually narrowed posteriorly (less angular at the sides behind the middle), with the extreme apex slightly obtuse and obscurely serrulate.

### 6. **Brachys pulverosus.**

Statura fere *B. anthrenoidis* at postice paullo minus attenuatus, major, cupreus, nitidus, sat dense fulvo-aureo-pubescens, albo-maculatus; elytris medio purpurascentibus, maculis fasciaque post medium calvis.
Long. $1\frac{7}{8}$ lin.

*Hab.* MEXICO, Jalapa (*Höge*).

The head and thorax are clothed with somewhat golden pubescence, but the pubescence is not dense; the thorax has two small white spots just above the scutellum. The elytra have the markings very similar to those in *B. anthrenoides*, but they are larger and leave less of the surface bare; each elytron has two lines of fulvous-golden pubescence, the outer one being on a slight obtuse costa, more conspicuous before and behind the median band, and on the inner side of this costa there is a fairly well-marked impression before the median band, and another behind it; the humeral region and the space near the scutellum (between the suture and the first pubescent line) are clothed with golden pubescence; at a short distance from the base, between the first and second pubescent lines, there is a small white spot; across the middle of the elytron there is a broad band of golden pubescence (bordered above with white), obliquely sinuate above near the suture; behind this there is a rather broad space almost without pubescence; and near the apex there is a rather broad crescent-shaped white spot (not quite reaching the suture, but extending beyond the lateral costa), followed by golden pubescence to the apex, with a small white spot near the outer angle; the median band beyond the lateral costa is golden anteriorly and white posteriorly.

### 7. **Brachys lætus.**

Læte cyaneus (vel violaceus), nitidus; thorace parce albo-pubescenti; elytris fascia mediana, altera post medium apiceque albo-pubescentibus.
Long. $1\frac{1}{2}$–$1\frac{3}{4}$ lin.

*Hab.* PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This species has much the form of *B. anthrenoides*, but has the elytra a little behind the middle as wide as at the shoulders and less acuminate at the apex. The thorax has some white hairs scattered over the surface, without forming spots. The elytra have the lateral costa very near the side, so that very little of the margin is seen when viewed directly from above; there is a band of very fine greyish-white pubescence a little before the middle, and a rather more distinct but narrower one at a short distance from the apex; the apex of each elytron has a white spot, and near the base there are traces of two lines of white hairs. The apex of the abdomen has a series of short, not very acute teeth.

The specimen from Bugaba differs in being of a more violet colour, and is of a stouter build, with the apex of the abdomen simple. It is probably the female of the same species.

### 8. **Brachys dimidiatus.**

Sat latus, parum convexus, nigro-æneus, cupreo-tinctus; thorace elytrisque basi pallide flavo-pubescentibus, his ante apicem guttis quatuor flavis ornatis.
Long. $1\frac{3}{4}$ lin.

*Hab.* GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

This is a rather broad species compared with any of the foregoing. The head has scarcely any pubescence. The thorax is entirely covered with yellow pubescence. The elytra have rather more than the basal half covered with pubescence, leaving only a brown spot below the shoulder; the posterior border of the pubescent part has a small emargination near the suture; in the apical area there is a small spot close to the margin, and a slightly larger dorsal one; the apex has a little pubescence; the lateral costa is distinct at the shoulder, sinuous below the shoulder, effaced behind the middle, but distinct towards the apex.

### 9. **Brachys simplex.** (Tab. VII. fig. 14.)

Æruginosus, nitidus; capite thoraceque cupreis, parum pubescentibus; elytris subtiliter crebre punctulatis, griseo-maculatis, plaga suturali ante medium fasciaque post medium calvis nitidis, costa laterali nulla.
Long. $2\frac{1}{2}$ lin.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

This species in general appearance resembles *B. floccosus* (without the tufts of hair on the elytra), but is relatively a little longer and narrower, with the elytra more

gradually narrowed at the apex. It is at once distinguished from all the preceding species by the absence of the lateral costa to the elytra. The head and thorax are very sparsely pubescent, but there are two small spots at the base above the scutellum. The elytra are closely and finely punctured, except an elongate ovate space on the suture before the middle, and a rather broad fascia behind the middle; the short pale grey pubescence is distributed over the punctured surface, but does not form any very distinct markings; before the apex, however, there is a well-defined slightly oblique band, which does not quite reach the suture, and there is a vague spot at the apex; each elytron has an oblong impression at some distance from the base, and two elongate impressions behind the middle in the bare fascia.

## LIUS.

*Lius*, Deyrolle, Ann. Soc. Ent. Belg. viii. p. 219 (1863).

The species hitherto recorded as belonging to this genus are all South American.

### 1. **Lius ares.**

*Lius ares*, Saund. Ent. Monthly Mag. xiii. p. 49 (1876)[1].

*Hab.* British Honduras, R. Sarstoon (*Blancaneaux*); Panama, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 6000 feet, Boquete 3500 feet, Caldera 1200 feet, Tolé (*Champion*).—Amazons, Santarem[1], Ega[1], Pará[1].

I am unable to separate the specimens collected by Mr. Champion from the type of *L. ares*. The head in the type is a trifle broader and a little more excavated; but without a series of specimens from Brazil I cannot venture to consider this a specific difference. The Central-American examples vary slightly in width. Out of a series of over fifty specimens only three have the head entirely blue, all the rest having the lower part of the face æneous as in the type of *L. ares*. The broader examples have the apical segment of the abdomen gently emarginate in the middle, the margin furnished with slight obtuse serrations, only visible under a microscope. The specimens with the head blue are a little narrower than the others, and have the apical segment of the abdomen narrower and without serrations.

The majority of the specimens are blue, with shades of purple on the thorax; one of those from Bugaba and two from Volcan de Chiriqui are almost entirely purple. Five examples from Boquete are a little larger than most of those from Volcan de Chiriqui, and in these the purple colour prevails.

### 2. **Lius dissimilis.** (Tab. VII. fig. 18.)

Rufo-cupreus, nitidissimus; thorace punctato; elytris striato-punctatis, postice bi-impressis; corpore subtus æneo-cupreo, antennis pedibusque nigrescentibus.

Long. $1\frac{3}{5}$ lin.

*Hab.* Guatemala, near the city 5000 feet (*Champion*).

Rather shorter and less convex than *L. ares*. The head is moderately broad, not very deeply impressed in front, with the central impressed line and the mouth brassy. The thorax has distinct punctures placed not very closely together all over the surface. The elytra are not quite so broad behind the middle as at the shoulders, and then narrowed to the apex (being a little shorter than in *L. ares*, they are not quite so gradually acuminate at the apex); they have fine but distinct punctures, which show a tendency to form lines; there is a shallow, slightly rugulose impression at the side, below the shoulder, and another behind the middle; and there is an oblique fairly well-marked impression at some distance from the apex, nearly touching the suture.

A single specimen from Cordova, Mexico (*Sallé*), may perhaps be a variety of this species. It differs in being uniformly brownish-æneous above; and the elytra are a trifle more acuminate, and have an additional round impression in the middle of the disc of each.

A single example from Guatemala city (*Champion*) differs from the type in being smaller, $1\frac{1}{2}$ lines long, of a brassy colour, very slightly tinted with coppery, with the punctuation of the elytra rather more irregular.

### 3. **Lius variabilis.**

Convexus, nitidissimus, subtus niger; capitis vertice, thorace scutelloque aureo-æneis; elytris elongatis, postice attenuatis, striato-punctatis, obscure viridi-æruginosis, vel rufo-purpureis, vel cyanescentibus, ante apicem levissime oblique impressis.
Long. $1\frac{1}{4}$–$1\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Chiacam, San Joaquin, and San Gerónimo in Vera Paz (*Champion*).

This is a comparatively long and narrow species. The head is not very broad, impressed in front, with the lower part of the base obscure green, the vertex golden-brassy. The thorax is not much narrowed in front, with the sides gently arcuate, with a few punctures scattered over the surface, especially at the base. The elytra are rather long, distinctly punctured in lines, with a few punctures on the interstices; a little narrower before the middle than at the shoulders, and then obliquely and gradually narrowed to the apex.

The majority of the specimens have the elytra of a dark bluish-green, often tinted with reddish-coppery at the sides, this latter colour sometimes spreading nearly all over the surface; one example has the elytra rich reddish-copper, verging on purple. These varieties all occur at San Gerónimo with the typical form.

### 4. **Lius parvulus.**

Niger, nitidissimus; capite antice æneo; elytris striato-punctatis, cyaneis vel viridi-cyaneis.
Long. 1–$1\frac{1}{4}$ lin.
*Var.* Capite thoraceque læte cupreis vel cupreo-æneis.

*Hab.* PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 4000 feet, Taboga I. (*Champion*).

This species agrees with the preceding in form, but perhaps has the elytra a trifle shorter. The head has the lower part of the face brassy, except in two or three examples. The punctures on the thorax are few and very fine. The elytra are striate-punctate; with the usual oblique impression before the apex very shallow.

Out of forty-eight examples only ten have the head and thorax coppery; they were taken with the specimens with the black thorax at Bugaba, except one, which is from Zapote, Guatemala.

## PACHYSCHELUS.

*Pachyschelus*, Solier, Ann. Soc. Ent. Fr. ii. p. 313 (1833).
*Brachys*, pars, Laporte & Gory, Mon. ii. p. 7.

With the exception of two from the Malay Archipelago, all the species of this genus are American, these ranging from the United States to Peru.

The structure of the apex of the abdomen of the males appears to afford good specific characters. Of several species Mr. Champion obtained long series, and whenever this has been the case I have found the arrangement and form of the teeth constant. The teeth are, however, evidently liable to be worn and occasionally broken, but a little experience enables one to see when this is the case. A few specimens have been met with in which the terminal segment is evidently malformed: a very notable case is figured on Tab. VIII. fig. 13.

### 1. Pachyschelus constans.

Late ovalis, parum convexus, niger, nitidus; capite thoraceque aureo-æneis; elytris viridi-cyaneis, subtiliter striato-punctatis.
Long. 1½ lin.

*Hab.* Panama, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

The head is lightly longitudinally impressed in front, with numerous distinct punctures placed not very close together. The thorax is very slightly impressed at the sides before the posterior angles; there are a few small punctures scattered over the surface. The scutellum is smooth and coppery. The elytra are rather dark bluish-green, moderately convex, with lines of very fine punctures, and with some fine punctures in the interstices; as broad as the thorax at the base, slightly widened to a little before the middle, the side between the shoulder and the widest part nearly rectilinear, then obliquely narrowed to the apex, the curvature being very slight; at the side below the humeral callosity there is a distinct but not very large impression, with a distinct swelling behind it.

One example differs from the thirty-seven others in having the elytra purple.

## 2. **Pachyschelus compactus.** (Tab. VII. figg. 15, 15 *a* *.)

♂. Breviter ovalis, convexus, niger, nitidus; capite thoraceque nigro-cyaneis; elytris cyaneis vel purpurascentibus, punctatis; abdominis apice dentibus brevibus truncatis sex vel septem armato.

♀. Capite thoracisque lateribus aureis vel cuprescentibus; thorace medio scutelloque nigro-cyaneis vel purpureo-nigris; elytris cyaneis.

Long. 1 lin.

*Hab.* PANAMA, Bugaba 1000 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This is a short oval species, only a little more narrowed behind than in front. The head has some distinct punctures scattered over the surface. The thorax, when seen under the microscope, has extremely fine coriaceous sculpture, with somewhat large, but very shallow, punctures here and there; these large punctures are scarcely noticeable in the male, but are a little more conspicuous and more numerous at the sides in the female. The elytra at the humeral callosity are a trifle wider than the base of the thorax, very slightly narrowed to the middle and then more rapidly narrowed to the apex, with no angulation at the side; they have the basal half distinctly punctured, the punctures ranging themselves in lines; the apical area has very vague punctuation; there is a small impression at the side below the shoulders.

Twelve males and ten females.

One example from Bugaba has the elytra dark green, another has them somewhat purple.

The following appear to be varieties of this species:—

1. Niger; capite aureo; elytris cyaneis. ♀. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, David (*Champion*).

One example.

2. Niger; elytris vix cyanescentibus. ♀. Vix 1 lin.

*Hab.* PANAMA, David (*Champion*).

Two examples.

3. Niger; capite thoraceque læte rufo-cupreis; elytris viridi-cyaneis. ♀. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

One example.

4. Niger; capite thoraceque læte rufo-cupreis, hoc discrete punctato; elytris cyaneis. ♂. 1 lin.

*Hab.* PANAMA, San Miguel in the Pearl Islands (*Champion*).

This differs from all the preceding in the sculpture of the thorax being smoother, with the usual shallow punctures, but with small but distinct punctures not very far apart all over the surface.

It is not improbably a distinct species.

* The generic name is erroneously written *Pachyscelus* on the Plate.

5. Niger; elytris cyaneo-viridibus. ♀. 1 lin.

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*).

This closely resembles variety 2, but the large shallow punctures on the thorax are rather more numerous and more distinct.

6. Niger; capite thoraceque aureis vel cupreis; elytris cyaneis vel cyaneo-viridibus. ♂. 1 lin.

*Hab.* MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan and Chiacam in Vera Paz (*Champion*).

Five examples have the thorax rather smooth, with the shallow punctures very distinct. A sixth example from San Juan has the ground-sculpture more distinctly reticulate (almost granular) than in any of the preceding; this specimen was mounted on the same card as one of the following.

7. Subtus niger; supra aureo-cupreus vel rufo-cupreus; elytrorum sutura marginibusque anguste cyaneo-tinctis. ♀. 1 lin.

*Hab.* BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, El Tumbador 2500 feet, San Juan in Vera Paz (*Champion*).

Six examples from Guatemala and two from British Honduras; these last and one from El Tumbador are of a golden colour, with the margin of the elytra coppery-red. All these specimens have the thorax rather smooth, with the shallow punctures very distinct.

My first inclination on examining these specimens was to consider varieties 5 and 6 as a male and female of a distinct species, with smoother thorax and more distinct large punctures, having its habitat extending from Vera Cruz into British Honduras. The only specimen, however, of variety 6 received with variety 7 differs considerably in the sculpture of the thorax from the other specimens of variety 6. And variety 5, a female, from Teapa (received with one of variety 6) has nearly the coloration of the typical male, although it has the more distinct large punctures on the thorax as in variety 6.

## 3. **Pachyschelus thoracicus.**

Oblongus, niger, nitidus; capite thoraceque rufo-cupreis vel aureo-æneis; elytris cyaneis, usque ad medium fere parallelis, postice oblique angustatis, tenuiter striato-punctatis.

Long. $1\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Capetillo, Chiacam in Vera Paz (*Champion*).

The head has a small impression in front, and there are a few fine punctures scattered over the surface. The thorax is very short and broad, and not so much narrowed in front as in the preceding species; there are a few fine punctures at the sides. The elytra are almost parallel for about half their length, and are then obliquely narrowed

to the apex, with a well-marked impression below the shoulder; there are some lines of small punctures, with some smaller punctures here and there in the interstices. In the specimen with the brassy thorax from Capetillo these lines of punctures are almost entirely wanting.

A single example from Cordova, Mexico (*Sallé*), with purple elytra may be referable to this species; but it has the elytra a trifle sinuate at the sides below the shoulders and the lines of punctures not very distinct.

This species is very close to the preceding, but is distinguished by the more parallel elytra.

### 4. **Pachyschelus hydroporoides.**

Ovalis, convexus, niger, nitidus; capite thoracisque lateribus parce subtiliter punctatis; elytris evidenter crebre punctatis, postice arcuatim angustatis.
Long. 1½ lin.

*Hab.* British Honduras, R. Hondo, Belize (*Blancaneaux*); Guatemala, Chacoj and San Gerónimo in Vera Paz (*Champion*); Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

This is a very convex and regularly oval species, calling to mind various *Hydropori* of the *H. lepidus* group; but it is rather broader than the last-mentioned insect. The head and thorax are not so shining as the elytra, with some very fine punctures scattered over the surface, except in the middle of the thorax. The elytra are moderately strongly punctured, the punctures placed more or less in lines; the impression below the shoulder is very slight.

Two examples, one from San Gerónimo and one from Belize, have the head slightly brassy.

All the specimens appear to be females.

### 5. **Pachyschelus ovalis.**

Ovalis, convexus, niger, nitidus; capite aureo-æneo; thorace viridi-cyaneo, punctato; scutello æneo; elytris cyaneis, vage striato-punctatis.
Long. 1½ lin.

*Hab.* British Honduras, R. Hondo (*Blancaneaux*); Guatemala, San Gerónimo and Chiacam in Vera Paz, El Tumbador 2500 feet (*Champion*).

This species closely resembles the preceding; it differs, however, in coloration and in having the thorax rather strongly punctured, not only at the sides but on the disc as well, the punctures not very widely separated from each other.

A single example from Mexico, Guerrero (*Höge*), appears to be referable to this species, but has the head dark green.

### 6. **Pachyschelus fulgens.** (Tab. VII. fig. 17.)

Ovatus, nitidus, subtus niger; capite thoraceque aureis viridi-tinctis; elytris rufo-cupreis. ♂.
Long. $1\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Coban in Vera Paz (*Conradt*).

This is less convex and less regularly oval than the preceding species, being more rounded in front and more narrowed posteriorly. The head and thorax are brassy, appearing very slightly green in some lights. The head is distinctly but not closely punctured. The thorax has distinct punctures scattered over the surface, and under a high magnifying-power a few smaller punctures are visible (under the microscope the whole surface is seen to be densely and extremely finely punctured); the sides at the middle are slightly rugose close to the margin. The elytra at the base are not broader than the base of the thorax; they are a trifle wider below the shoulders, and are then arcuately narrowed to the apex; reddish-coppery, verging into brassy at the apex; finely and irregularly punctured, with some more distinct punctures in the basal half; the lateral impression is rather large and somewhat triangular. The terminal segment of the abdomen is slightly narrowed at the apex, with four equal acute teeth on each side (placed slightly obliquely), the two sets of teeth separated by a wide space, the margin here being rectilinear (fig. 17).

### 7. **Pachyschelus communis.** (Tab. VIII. fig. 3.)

Ovatus, post medium attenuatus, nitidus, subtus niger; capite viridi-aureo; thorace medio nigro, lateribus aureis viridi-tinctis, rugosis; scutello nigro; elytris cyaneis, sat fortiter punctatis, ad apicem lævioribus. ♂ ♀.
Long. $1\frac{1}{3}$ lin.

*Hab.* PANAMA, Taboga I. (*Champion*).

The head is finely and distinctly, but not closely punctured. The thorax is smooth on the disc, with very distinct punctures scattered over the surface and smaller punctures interspersed between these; the sides are golden, this colour extending from the margin to a line drawn from the posterior angle to the inner margin of the eye; this golden part is rugose. The elytra are dark blue, verging into green, somewhat strongly punctured, but smoother at the apex, rather long, as broad at the base as the base of the thorax, subparallel to the middle of their length, and then obliquely narrowed to the apex (or even very slightly sinuate behind the middle), the sides being very obtusely but distinctly angular at the middle; the lateral impression is moderately large. The apical segment of the abdomen of the male has three nearly equal acute teeth on each side (placed obliquely); the two sets of teeth separated by a rather wide space (fig. 3).

### 8. **Pachyschelus familiaris.** (Tab. VIII. fig. 9.)

Ovatus, post medium angustatus, nitidus; capite antice viridi-aurato; thorace fere nigro, lateribus anguste viridi-auratis; scutello nigro; elytris purpureis vel violaceis, punctatis. ♂ ♀.
Long. $1\frac{1}{3}$ lin.

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*).

This species is so very close to *P. communis* that I separate it with reluctance. The colour is, however, different, and the rugose golden-green margins to the thorax are narrower, intermediate in this respect between *P. communis* and *P. purpureipennis*. The terminal segment of the abdomen of the male has an arcuate emargination in the middle, with three very short teeth on each side (placed obliquely), the outer tooth rather smaller than the others (fig. 9).

One male and one female. The former has the elytra purple, the latter has them violet.

### 9. **Pachyschelus incertus.** (Tab. VIII. fig. 4.)

Ovatus, post medium attenuatus, nitidus, subtus niger; capite cupreo-aureo; thorace medio cyaneo-æneo, nitido, lateribus late cupreo-aureis, confertim subtiliter rugosis; elytris purpureis. ♂.

Long. 1½ lin.

*Hab.* PANAMA, Taboga I. (*Champion*).

Very close to the preceding, but a trifle broader. It differs in having the rugose surface at the sides of the thorax much more extended, and even the disc is sculptured somewhat in the same way, but much less strongly. The terminal segment of the abdomen has three teeth on each side of the apex (placed obliquely), the innermost the strongest, the second and third each a little smaller; the two sets of teeth separated by a rather wide space, the margin here being rectilinear (fig. 4).

A single male example from Tolé, Panama, differs from the type in being narrower and in having the rugose surface at the sides of the thorax much less extended. The head is tinted with green in front. The thorax is nearly black, with the sides narrowly bordered with blue-grey. The elytra are purple. The form of the apex of the abdomen is nearly the same, but the teeth are a trifle shorter.

### 10. **Pachyschelus octodentatus.** (Tab. VIII. fig. 5.)

Ovatus, post medium attenuatus, nitidus, subtus niger; capite antice viridi; thorace medio nigro-æneo, lateribus late viridibus vel aureo-cupreis, rugosis; scutello nigro; elytris cyaneis, sat fortiter punctatis, ad apicem lævioribus. ♂ ♀.

Long. 1⅓ lin.

*Hab.* PANAMA, Bugaba, David (*Champion*).

This closely resembles *P. communis*, but the coloured portion of the sides of the thorax is much broader, leaving about one third in the middle dark. The terminal segment of the abdomen of the male is narrowed at the apex and has eight acute equidistant teeth arranged in a curve, the central pair being a little smaller than the outer ones (fig. 5).

### 11. **Pachyschelus robustus.** (Tab. VIII. fig. 10.)

Ovatus, post medium attenuatus, nitidus, subtus niger; capite thoracisque lateribus viridi-auratis vel

æneis, thoracis disco scutelloque nigris; elytris cyaneis, viridi-cyaneis vel purpurascentibus, punctatis. ♂ ♀.

Long. $1\frac{6}{10}$ lin.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

This species closely resembles *P. communis* in general form, but is decidedly broader and is larger. The thorax has the rugose sculpture at the sides rather more extended than in *P. communis*, but not so much as in *P. octodentatus*; there are numerous large shallow punctures towards the sides, especially near the posterior angles. The terminal segment of the abdomen of the male is very similar to that of *P. octodentatus*, but the apex is less produced; there are eight teeth arranged in a curve, but these are rather stronger than in *P. octodentatus*, the central pair being distinctly wider than the outside ones (fig. 10).

### 12. **Pachyschelus diversus.** (Tab. VII. fig. 16.)

Ovalis, nitidus, subtus niger, supra cyaneus; thorace medio scutelloque fere nigris; elytris sat fortiter punctatis. ♂.

Long. $1\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Chiacam in Vera Paz (*Champion*).

This species is very close to *P. communis*, but is a little narrower and has the elytra less distinctly angular at the sides. The sides of the thorax have the rugose surface less clearly limited, and this part is only a little paler bluish-green instead of being brassy. The terminal abdominal segment of the male has three similarly formed teeth on each side of the apex, but the space in the middle is wider and more open (less **V**-shaped), and the first tooth is smaller than the second (fig. 16).

### 13. **Pachyschelus dubius.** (Tab. VIII. fig. 6.)

Ovalis, nitidus, subtus niger, supra cyaneus; capite thoraceque medio paullo viridi-aureo-tinctis; elytris punctatis. ♂.

Long. $1\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Teleman in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

I am unable to give any characters by which this species may be distinguished above from *P. diversus*, but the terminal segment of the male is differently shaped; this has a small triangular notch in the middle, with a broad, angularly emarginate process on each side, and a small acute tooth on the outside at a lower level (fig. 6).

### 14. **Pachyschelus affinis.** (Tab. VIII. fig. 7.)

Ovatus, nitidus, cyaneus. ♂.

Long. $1\frac{1}{2}$ lin.

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui 3000 feet, Peña Blanca 3000 feet (*Champion*).

This insect exactly resembles *P. dubius*, but is a trifle larger. It is only distinguishable by the male-characters. The terminal segment of the abdomen has a rather wide **V**-shaped incision in the middle, with a very strong tooth on each side of it, next to which is a less strong and slightly shorter tooth, and on the outside a small acute tooth at a lower level (fig. 7).

A single example from each of the above localities.

### 15. **Pachyschelus purpureipennis.** (Tab. VIII. fig. 8.)

Ovatus, post medium angustatus, nitidus, subtus niger; capite thoraceque nigris vel æneis, elytris purpureis. Long. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui 3000 feet (*Champion*).

This species resembles *P. diversus* in form; it is perhaps a little less narrow, but is narrower than *P. octodentatus* and less angular at the sides. The head and thorax are uniform black or brassy; the latter is rather smooth in the middle, vaguely punctured at the sides with fine and larger punctures, but without the rugosity present in *P. octodentatus*. The elytra are purple, and are moderately finely punctured. The terminal segment of the abdomen of the male has eight nearly equidistant teeth arranged in a curve as in *P. octodentatus*, but the central pair are a little larger (not longer) than the outer ones (fig. 8).

A single example from Chontales appears to be referable to this species.

### 16. **Pachyschelus ardens.** (Tab. VIII. fig. 1.)

Oblongo-ovatus, nitidus, subtus niger; capite thoraceque viridi-aureis, hoc medio cuprescenti, fortiter discrete punctato; elytris cyaneis vel purpureis, punctatis, post medium arcuatim attenuatis. ♂ ♀.
Long. $1\frac{1}{2}$ lin.

*Hab.* MEXICO, Cordova (*Sallé*).

This species is more elongate and more oblong than any of the preceding. The thorax is less narrowed in front; the posterior angles are less directed backwards, slightly blunted at the point, and projecting slightly beyond the shoulders of the elytra and not fitting close to them; the surface is nearly smooth, with some slight rugosity only close to the margin; the punctures are very distinct and are not placed near together. The elytra are relatively longer, and less obliquely attenuated at the apex.

The male has the terminal segment of the abdomen obliquely narrowed, the apex with eight short teeth arranged in a slight curve, the middle ones a little larger than the outer ones (fig. 1).

Two examples, male and female, received with the above, differ from the type in having the head and thorax nearly black and the elytra brownish-brassy. The terminal segment of the abdomen of the male is unfortunately asymmetrical, and I am therefore unable to say what its normal form would be.

### 17. **Pachyschelus secedens.** (Tab. VIII. fig. 2.)

Oblongo-ovatus, nitidus, niger; capite antice thoracisque lateribus æneis, hoc fortiter discrete punctato; elytris cyaneis. ♂ ♀.
Long. $1\frac{1}{2}$ lin.

*Hab.* Mexico, Tupataro in Guanajuato (*Höge*).

This species is very near to *P. ardens*, but is of a different coloration and is more depressed. The punctuation of the thorax is less distinct. The elytra are longer and do not begin to narrow posteriorly till behind the middle, so that they appear more parallel. The male characters in the terminal segment of the abdomen are somewhat uncertain, as none of the specimens have this part in good condition; the most perfect examples have the apex produced and truncated, with a slight notch in the middle, and two very small teeth close together at the outer angle of the truncature (fig. 2); the specimens are, however, not quite alike, nor are they quite symmetrical.

A single example from Cordova and three from Northern Sonora (*Morrison*) appear to be referable to this species, but the latter have the thorax more broadly margined with brassy.

### 18. **Pachyschelus cyaneus.**

*Brachys cyanea*, Gory, Mon. iv. p. 344, t. 58. fig. 340[1].

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith*); Guatemala, San Juan in Vera Paz, El Tumbador 2500 feet (*Champion*); Panama, Taboga I. (*Champion*).—Guiana, Cayenne (*Brit. Mus.*); Brazil[1].

The terminal segment of the abdomen of the male is somewhat narrowed, with a deep, narrow incision in the middle, a somewhat obtuse tooth on each side of it, then two broad truncate teeth, and a small acute shorter tooth on the outside. A male specimen from Cayenne shows the same structure, but the teeth are a little shorter.

### 19. **Pachyschelus discoidalis.** (Tab. VIII. fig. 11.)

Rotundato-ovalis, convexus, nitidus, subtus niger; capite violaceo (♂) vel viridi-æneo (♀); thorace elytrorumque marginibus violaceis; scutello elytrorumque disco rufo-cupreis.
Long. $1\frac{1}{3}$ lin.

*Hab.* Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

This very handsome species is much more rotundate than any of the preceding. The thorax is nearly smooth, with the sides finely granular. The females have the anterior angles brassy-green. The elytra fit close to the thorax at the base, gradually widen for one third their length, and are then arcuately narrowed to the apex; striate-punctate, with a few punctures on the interstices; reddish-coppery, with a broad bluish-purple margin. The terminal segment of the abdomen in the male is not produced, but has

six nearly equal short broad truncate teeth, with an indication of a small one on the outer side (fig. 11); one example, which appears to have the teeth much worn, does not show these small teeth.

### 20. **Pachyschelus granulosicollis.** (Tab. VII. fig. 20.)

Oblongus, depressus, post medium oblique attenuatus, subtus niger; capite viridi-æneo, nitido, vertice confertim subtiliter granuloso; thorace brevissimo, lato, viridi-aureo, omnino confertim subtiliter granuloso, surdo, punctis minutis interspersis; scutello lato, obscure æneo, polito; elytris rufo-cupreis (dorso fuscescente), punctatis. ♀.

Long. $1\frac{2}{3}$ lin.

*Hab.* Guatemala, San Gerónimo (*Champion*).

This is a somewhat short and broad species. The elytra at the base are not wider than the base of the thorax, but are gradually widened to a little behind the middle and then obliquely narrowed to the apex; the surface has a somewhat wrinkled appearance, and there are three or four lines of punctures in the basal half; the lateral impression is strongly marked.

### 21. **Pachyschelus deplanatus.** (Tab. VIII. fig. 12.)

*Lius deplanatus*, Chevr. in Silbermann's Rev. Ent. v. p. 104[1].

*Hab.* Mexico, Orizaba[1].

The type-specimen of this insect, now in the British Museum, is a female. It is an elongate oblong-ovate depressed species, very unlike any but the following. A specimen from M. Sallé's collection measures 2 lines, but does not otherwise differ from the type.

Three specimens from San Gerónimo may be referred to this species, but they appear to have the elytra a trifle shorter. The terminal segment of the abdomen in the male is not much produced at the apex, the produced part slightly arcuate, with eight teeth; the outer tooth at each end of the series is acute, and has its apex directed outwards, the six others are broad and almost truncate (fig. 12).

### 22. **Pachyschelus aversus.** (Tab. VIII. fig. 13.)

Late ovatus, depressiusculus, nitidus, supra purpureo-cyaneus; elytris sat fortiter punctatis.

Long. $1\frac{9}{10}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

This is very like the preceding, but is distinctly shorter and broader, with the elytra relatively shorter and more rapidly narrowed to the apex. The head and thorax are blackish-blue; the elytra dark purple-blue. The thorax has some small punctures scattered over the sides. The terminal segment of the abdomen of the male is injured in the specimen before me, but appears to have had ten teeth: the outermost tooth is very short and conical, directed outwards, the next one very small and acute; the next is much larger, conical, very acuminate at its apex, directed outwards; the next is a little

smaller, acute, obliquely directed outwards; the fifth (next to the central line) is of nearly the same form as the fourth (fig. 13).

### 23. **Pachyschelus astræus.**

Oblongo-ovalis, brevis, convexus, nitidus; capite thoraceque cupreo-aureis; elytris cyaneo-æruginosis, basi purpureo-tinctis, sat fortiter punctatis.
Long. $1\frac{3}{4}$ lin.

*Hab.* Mexico, Cordova (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*).

This is a very short convex species, about one-fifth longer than broad. The head and thorax are brassy-golden, tinted with coppery towards the sides, with small punctures scattered over the surface. The scutellum is brownish-æneous. The elytra are very convex just below the scutellum; almost parallel from the base to a trifle beyond the middle, and then very obliquely narrowed to the apex, with lines of moderately strong punctures, the intervals almost smooth.

A single specimen from Cuernavaca in Morelos (*H. H. Smith*) differs from the others in being distinctly narrower, and in having the elytra more strongly punctured, the intervals also having more distinct punctures.

All the examples are females.

### 24. **Pachyschelus modestus.** (Tab. VIII. fig. 14.)

Ovalis, leviter convexus, sat nitidus; capite thoraceque nigro-cyaneis, confertim evidenter punctatis; scutello nigro; elytris cyaneis, striato-punctatis.
Long. $1\frac{1}{2}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

This is a somewhat broad, regularly ovate species, a little more narrowed behind than in front. The thorax is very obscure blackish-blue, with the margins vaguely tinted with purple; it is very densely and rather strongly punctured all over. The elytra at the base are as broad as the base of the thorax, a little wider below the shoulders, and then arcuately narrowed to the apex, obscure blue, appearing slightly dull green in some aspects, with slight purple tints at the margins; their convexity is not very great. The terminal segment of the abdomen of the male is gently sinuate on each side, rounded at the apex, and furnished with about eighteen short, not very acute teeth, and with some smaller and less definite ones at each end of the series (fig. 14). A female specimen from Volcan de Chiriqui has the purple on the elytra more extended.

A single female example from David in Chiriqui (*Champion*) differs from the one described above in having the head and lateral margins of the thorax bright green, and the green on the thorax limited by a coppery line drawn from the posterior angle to the middle of the anterior margin. This may be a distinct species.

### 25. **Pachyschelus nigricollis.** (Tab. VII. figg. 21, 21 *a*.)

Niger, nitidus, paullo convexus; elytris violaceis, sat fortiter punctatis, ad apicem acuminatis, lateribus ad medium angulatis.

Long. $1\frac{3}{4}$ lin.

*Hab.* Mexico, Cordova (*Sallé*).

This is a rather broad, not very convex species, with a form approaching diamond-shape. The head is black and shining. The thorax is black and shining; it has small but distinct punctures scattered over the disc; the sides are somewhat narrowly bordered with dull green, the green part being closely punctured. The elytra at the base are as broad as the base of the thorax, a little widened to the middle, and then obliquely and almost rectilinearly narrowed to the apex; the lateral impression is very well marked. The terminal segment of the abdomen in the male is very much narrowed, produced and deflexed, almost truncate at the apex, with eight nearly equal, short, not very acute teeth; owing to the apex being deflexed, these teeth are only visible in certain positions (fig. 21 *a*).

### 26. **Pachyschelus centralis.**

Rotundato-ovalis, leviter convexus, subtus niger, nitidus, supra brunneo-æneus; capite thoraceque confertim subtiliter rugoso-punctatis; scutello triangulari, lævi; elytris confertim rugosis.

Long. $1\frac{1}{2}$ lin.

*Hab.* Guatemala, El Tumbador 2500 feet (*Champion*).

This is one of the most rotund species of the genus. The upper surface is dull owing to the dense sculpture. The head and thorax are densely punctured. The elytra are somewhat differently sculptured, being more rugose and somewhat closely strigose near the base; the suture below the scutellum is slightly shining; the lateral impression is only lightly indicated.

Two female examples.

### 27. **Pachyschelus lunifer.** (Tab. VII. figg. 22, 22 *a*.)

Fere rotundatus, leviter convexus, niger, creberrime punctatus, pube brevi grisea dense tectus, scutello lunaque communi in disco elytrorum nigris nitidis; thoracis lateribus aureo-viridi marginatis; genubus et tibiis anticis supra aureis.

Long. $1\frac{3}{4}$ lin.

*Hab.* Guatemala, Volcan de Atitlan 3000 feet (*Champion*).

A very rotundate species, only a trifle longer than broad, rounded in front, very slightly narrowed posteriorly; densely clothed with short pale grey pubescence, except the scutellum (which is almost bare) and a large lunate spot (common to both the elytra), where the pubescence is black. The thorax is very short and broad, and is deeply semicircularly emarginate in front, so that the head is much more imbedded in the thorax than is usually the case. The terminal segment of the abdomen of the

male is widely emarginate in the middle of the apex, with four teeth (placed obliquely) on each side, the first, second, and third of these subequal, strong and acute, the outside one smaller (fig. 22 *a*).

### 28. **Pachyschelus cinctus.** (Tab. VIII. fig. 15.)

Ovatus, convexus, niger, obscure ænescens, pube brevi griseo-alba tectus; elytris macula magna communi rotundata calva.

Long. $1\frac{1}{4}$ lin.

*Hab.* Guatemala, Rio Maria Linda 500 feet (*Champion*); Panama, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

A short ovate species, arcuately acuminate posteriorly. The head and thorax are densely punctured, clothed with greyish-white pubescence, the latter apparently with two small bare spots on the disc. The scutellum is bare and shining. The elytra are shining, with some indistinct lines of punctures; clothed with greyish-white pubescence, except a large round spot, common to both elytra. The terminal segment of the abdomen of the male is very slightly sinuate on each side, almost truncate at the apex (with the angles rounded), with twelve or fourteen short, small, not very sharp teeth (fig. 15). In some lights a slight coppery-purple tint may be seen at the sides of the elytra.

### 29. **Pachyschelus irroratus.** (Tab. VII. figg. 23, 23 *a*.)

Elongatus, ovatus, convexus; capite thoraceque æneis, punctatis, parce griseo-pubescentibus; elytris brunneo-cupreis, sub humeris thorace perpaullo latioribus, postice gradatim angustatis, evidenter punctatis, pube brevissima grisea irroratis.

Long. $1\frac{5}{8}$ lin.

*Hab.* Mexico, Mazatlan in Sinaloa (*Höge*).

This is a very elongate-ovate, convex species. The head is not much imbedded in the thorax. The thorax is much less short than usual, and also much less narrowed anteriorly, comparatively more gently emarginate in front; distinctly punctured, the punctures not very far apart. The scutellum is smooth. The elytra immediately below the shoulders are only a trifle wider than the thorax, and thence to the apex are in a gentle curve narrowed to the apex; the punctuation is somewhat strong and irregular; the short pubescence does not appear to form any distinct pattern. The terminal segment of the abdomen of the male has eight moderately large teeth arranged in a curve, broad at their base, gradually acuminate, the outer tooth smaller than the central ones (fig. 23 *a*).

### 30. **Pachyschelus laticeps.** (Tab. VIII. fig. 16.)

Elliptico-ovalis, leviter convexus, nitidus; capite lato, thorace scutelloque brunneo-cupreis; elytris purpureis, crebre punctatis, fascia post medium apiceque griseo-pubescentibus, lateribus medio obtuse angulatis.

Long. $1\frac{1}{2}$ lin.

*Hab.* Panama, Tolé (*Champion*).

This species is remarkable for its form, being almost equally narrowed in front and behind, with the head very broad and the elytra acuminate, the greatest width being at the middle of the latter. The head and thorax are finely reticulate-striolate. The thorax is not much narrowed in front (as compared with allied species), with the sides lightly transversely impressed in front and at the base. The elytra are purple, with some very short pale pubescence, which forms a not very distinct fascia behind the middle, and appears almost to cover the apex; a few pale hairs are also visible near the base. The terminal segment of the abdomen of the male has the apex very broad, almost truncate, with the angles rounded, furnished with about twenty short blunt teeth, one or two at the extremities of the series being small and not so well defined as the others (fig. 16).

### 31. **Pachyschelus signatus.** (Tab. VIII. fig. 17.)

Trapeziformis, parum convexus, nitidus; capite thoraceque æruginosis (vel brunneo-æneis); elytris brunneo-cupreis (vel cupreis), obsolete æneo-variegatis, postice angustatis, ad apicem utrinque oblique truncatis, fasciis duabus (altera mediana, altera ante apicem) angulatis, griseo-albis ornatis.

Long. $1\frac{3}{8}$ lin.

*Hab.* Guatemala, Cahabon, Chiacam, and San Juan in Vera Paz (*Champion*).

This species has a short thorax and relatively long elytra. The greatest width is at the juncture of the elytra and thorax; the width slightly diminishes to the middle of the elytra, and then a little more obliquely to the apical truncature. The thorax has rather large, very shallow punctures scattered over the surface and is sparingly pubescent. The elytra are punctured and are slightly rugose at the shoulders, with a smoother patch between the pubescent bands, this smoother part being of a darker colour than the rugose part; there is a little pale pubescence in the basal region, and a not very distinct narrow fascia at the middle—commencing from the margin it curves upwards to near the suture and then turns obliquely downwards to the suture; the posterior fascia commencing from the margin is very slightly directed downwards, then very slightly upwards, and then descends again to the suture, this fascia being more dense near the middle and at first sight appearing like an oblique whitish spot; there are a few pale hairs near the apex. The terminal segment of the abdomen of the male is rather widely produced at the apex, widely but not deeply emarginate, with a slight notch in the middle, nearly parallel at the sides, with two acute teeth on the outer side at a lower level (fig. 17).

The foregoing description is taken from a specimen from Cahabon. The example from Chiacam is of a more brownish-brass colour. Four female examples from San Juan are of a dark bluish-green.

### 32. **Pachyschelus trapezoidalis.** (Tab. VII. figg. 24, 24 *a*.)

Trapeziformis, parum convexus, nitidus; capite thoraceque æneis vel brunneo-æneis, pubescentibus; elytris cupreo-æneis vel brunneo-æneis æneo-variegatis, pube griseo-alba lituratis.
Long. $1\frac{3}{8}$ lin.

*Hab.* Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This species closely resembles *P. signatus* in form and general markings. The elytra are, however, a little longer, a trifle more gradually narrowed to the apical truncature, and the sutural angle is distinctly produced. The terminal segment of the abdomen of the male has a wide triangular emargination at the apex, with four triangular teeth on the outer side placed very obliquely; one example (fig. 24 *a*) has the apex much worn, leaving only the central part of the emargination.

A single specimen from Yolos, Mexico, appears to belong to this species, but has the pubescence of a more distinctly sandy-yellow.

### 33. **Pachyschelus undulatus.** (Tab. VIII. fig. 18.)

Trapeziformis, convexus, nitidus, nigro-cyaneus; thorace lateribus parce pubescente; elytris tenuiter punctatis, fasciis duabus albis ornatis.
Long. $1\frac{3}{8}$ lin.

*Hab.* Panama, Bugaba, San Lorenzo (*Champion*).

This species approaches *P. trapezoidalis* in general form, but is much more convex, especially in the thorax. The thorax is shining, with fine punctures here and there. The elytra at the base are as broad as the thorax, almost parallel for not quite half their length, and then obliquely narrowed to the apical truncature; the apical margins are rather unusually denticulate; there is a white spot close to the scutellum; the first band commencing at the lateral angulation descends slightly to about the middle of the elytron, then ascends obliquely, and, turning over, descends to the suture; the anteapical fascia is very distinct—at first it is transverse, then ascends obliquely a very short distance, and then descends to the suture. The terminal segment of the abdomen of the male is deeply excised at the apex, with two strong triangular teeth to the projecting part on each side of the excision, and with a smaller acute tooth on the outer side at a much lower level (fig. 18).

### 34. **Pachyschelus bifasciatus.** (Tab. VIII. fig. 19.)

Ovatus, convexus, sat nitidus, post medium oblique attenuatus, ad apicem utrinque oblique truncatus; capite thoraceque virescenti-cyaneis, tenuiter punctatis, parce pubescentibus; elytris nigro-cyaneis violaceo-tinctis, minus nitidis, punctulatis, fasciis duabus albidis ornatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* Guatemala, Teleman in Vera Paz (*Champion*).

The elytra are obscure dark blue, with violet or purple tints at the base and sides; at the base they are as wide as the base of the thorax, very slightly widened (almost parallel) to a little before the middle, then obliquely narrowed, slightly sinuate posteriorly, and then more obliquely narrowed to the apex; there are a few pale hairs

near the scutellum, an undulating fascia a trifle behind the middle, descending at the suture, and a second fascia just before the apex. The terminal segment of the abdomen of the male is excised at the apex, the excision being straight in the middle, with its sides oblique; on the outer side are four not very large triangular teeth placed very obliquely (fig. 19).

### 35. **Pachyschelus elegans.** (Tab. VIII. fig. 20.)

Ovatus, convexus, nitidus, supra obscure cupreo-purpureus; thorace creberrime reticulato-striolato, lateribus parce pubescentibus; elytris postice arcuatim angustatis, basi punctatis, ante apicem fascia communi curvata alba ornatis.

Long. $1\frac{3}{8}$ lin.

*Hab.* PANAMA, Taboga I. (*Champion*).

This species somewhat resembles *P. bifasciatus*, but is a little broader, without angulations at the sides, a trifle broader just before the middle than at the base, and then arcuately narrowed to the apex; the apical half is very delicately punctured, appearing almost smooth; there is a little whitish pubescence near the scutellum, a small spot near the suture, about the middle, and a distinct curved fascia commencing at the margin behind the middle and descending to one-third from the apex at the suture. The terminal segment of the abdomen of the male has at the apex four teeth on each side (separated by a wide triangular space)—first a very small one, then a large terminal one, a rather smaller one on the outer side at a lower level, and the fourth still smaller and lower down (fig. 20).

### 36. **Pachyschelus azureus.** (Tab. VIII. fig. 21.)

Supra azureus, nitidus; capite thoraceque æneo-tinctis; elytris postice angustatis, punctatis, ante apicem guttis duabus albis ornatis.

Long. $1\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Cahabon, Teleman, Chacoj, and Chiacam in Vera Paz, El Tumbador 2500 feet (*Champion*).

This and the following species, which closely resemble each other, vary somewhat in tint, the elytra being usually bright blue (sometimes slightly tinted with golden-green), and the head and thorax more generally of a less distinct blue. The thorax is very finely and not very closely punctured. The elytra at the base are as wide as the base of the thorax, scarcely widened at the middle, narrowed posteriorly for some distance, and then very obliquely narrowed at the apex; moderately strongly punctured at the base, smoother at the apex; each elytron has an obliquely transverse white spot near the apex. The terminal segment of the abdomen of the male has three triangular teeth on each side, separated by a wide space or excision, the base of which is nearly rectilinear; the second tooth is a little longer than the first, and the third or outer one is smaller and at a lower level (fig. 21).

A single example from R. Hondo, British Honduras (*Blancaneaux*), appears to

be referable to this species. Five examples from Volcan de Chiriqui differ from the specimens described above in being larger, measuring $1\frac{5}{8}$ lines in length.

### 37. **Pachyschelus biguttatus.** (Tab. VIII. fig. 22.)

Omnino azureus, nitidus; elytris ante apicem fascia alba ad suturam interrupta ornatis.
Long. $1\frac{1}{8}$–$1\frac{1}{4}$ lin.

*Hab.* PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2000 to 4000 feet, David (*Champion*).

This species very closely resembles the preceding, but is entirely bright blue above, and averages a little smaller. The terminal segment of the abdomen of the male has four short triangular teeth, arranged in a curve, on each side of a moderately wide triangular notch (fig. 22).

### 38. **Pachyschelus sticticus.** (Tab. VIII. fig. 23.)

Omnino azureus, nitidus; elytris ante apicem guttis duabus albis ornatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Tamahu, Senahu, and San Juan in Vera Paz (*Champion*).

This species closely resembles *P. biguttatus*; the white spots on the elytra are, however, a trifle wider, and more widely separated at the suture. The terminal segment of the abdomen of the male is broad at the apex, only slightly curved, with eight short, subequal teeth, the middle pair a little more separated than the others (fig. 23).

One example from San Juan is much shaded with golden-green. Three examples from Teapa in Tabasco (*H. H. Smith*) appear to be referable to the same species.

### 39. **Pachyschelus pubicollis.** (Tab. VIII. fig. 24.)

Ovatus, convexus, postice bene attenuatus; capite thoraceque brunneo-æneis, parce griseo-pubescentibus; elytris cyaneis, marginibus violaceo-tinctis, regione suturali subtiliter punctata, ante apicem fascia angusta alba ad suturam interrupta ornatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, San Juan in Vera Paz (*Champion*); PANAMA, Taboga I., San Miguel in the Pearl Islands (*Champion*).

This species resembles *P. sticticus*, but is narrower, and has the elytra much more acuminate. The thorax is marked with moderately large, very shallow punctures, often open on one side; these are few on the disc, but increase in number towards the sides, where they are subconfluent in an oblique direction. The elytra are dark blue, with the margins and apex violet; near the apex of each elytron there is a slightly curved white line, which does not reach the suture. The terminal segment of the abdomen of the male is somewhat narrowed at the apex, with four subequal short teeth on each side, placed obliquely, separated by a wide, but shallow, triangular space (fig. 24).

## LEIOPLEURA.

*Leiopleura*, Deyrolle, Ann. Soc. Ent. Belg. viii. p. 219 (1864).

The six described species of this genus are from Cuba and South America; twenty-three are here recorded from Central America.

### 1. **Leiopleura intermedia.** (Tab. IX. fig. 1.)

Oblonga, depressa, subtus nigra, supra cuprea; capite antice viridi, subtiliter punctulato; thorace medio paullo infuscato, nitido, parce punctato, lateribus confertim subtiliter rugosis et parce punctatis, marginibus viridibus; elytris confertim subtiliter rugosis, parallelis, ad apicem arcuatim attenuatis, regione suturali paullo infuscata, magis nitida, parcius punctata.

Long. $1\frac{3}{4}$ lin.

*Hab.* GUATEMALA, Cerro Zunil 4500 feet (*Champion*).

The antennæ when at rest are lodged in an impression on the under flank of the prothorax. The front legs are also lodged in a well-marked impression; the anterior and intermediate tibiæ are subcylindrical; the posterior tibiæ are a little widened at the middle. The head has a slight longitudinal impression in front; it is densely and finely rugose and punctured. The thorax is widest just before the base, convex, without any lateral impression. The elytra are a trifle narrower than the thorax, subparallel for two-thirds their length, and then narrowed to the apex; there is a light impression at the side below the shoulder and another near the suture before the apex.

### 2. **Leiopleura contigua.** (Tab. IX. fig. 2.)

Oblongo-ovata, sat lata, depressa, nigra, nitida; capite virescente, confertim subtiliter rugoso, parce punctato, antice leviter concavo; thorace subtilissime rugoso, punctato, disco fusco-nigro, lateribus virescentibus, leviter impressis; elytris nigro-purpurascentibus, crebre subtiliter punctatis.

*Var.* Capite thoracisque lateribus concoloribus.

Long. $1\frac{7}{8}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 3500 feet (*Champion*).

The thoracic impression for the antennæ is very short and shallow. The anterior legs are in repose lodged in a cavity in the prothorax; the tibiæ of the front legs are subcylindrical, a little thickened near the base; the intermediate tibiæ are much curved; the posterior tibiæ are very slightly flattened, but not dilated. The antennæ and the anterior surface of the femora and part of the tibiæ are green. The thorax has the disc marked with stelliform punctures, which are not very close together. The elytra have the margin below the shoulder flattened; there is a light impression on the margin behind the middle, and another nearer the suture not far from the apex.

A second specimen differs from the one above described in the green colour being absent.

### 3. **Leiopleura divisa.**

Oblongo-ovata, sat lata, depressa, nigra, nitida, capite antice obscure æneo-virescente; thoracis disco punctato, lateribus late subtilissime rugosis, virescentibus; elytris nigro-purpurascentibus, subtiliter punctatis, vermiculoso-striolatis, fasciis duabus sat latis ad suturam interruptis viridibus rugosis.
Long. $1\frac{1}{2}$ lin.

*Hab.* Panama, Volcan de Chiriqui 2500 feet (*Champion*).

This species is very close to *L. contigua*; but it is smaller, and has two bright green rugose bands on each elytron—one a little before the middle, obliquely directed upwards towards the scutellum, not reaching the suture; the second near the apex, similar but shorter. The basal joint of the antennæ and part of the anterior surface of the femora are brassy. The intermediate tibiæ are subcylindrical and comparatively straight.

### 4. **Leiopleura crassa.** (Tab. IX. fig. 3.)

Oblonga, convexa, nitida; capite virescente; thorace cæruleo, nitidissimo, disco bene convexo, parce punctulato, lateribus postice late deplanatis, basi transversim sat profunde impressa; elytris violaceo-cyaneis, punctatis.
Long. $1\frac{1}{4}$–$1\frac{3}{8}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

*Var.* 1. Capite thoraceque nigris.

*Hab.* Panama, Bugaba 800 to 1500 feet (*Champion*).

*Var.* 2. Tota nigra.

*Hab.* Guatemala, Chacoj in Vera Paz, Las Mercedes 3000 feet, Cerro Zunil 4000 to 5000 feet (*Champion*); Panama, Volcan de Chiriqui 2500 to 6000 feet, Taboga I. (*Champion*).

The head appears smooth, with some moderately large punctures scattered over the surface; but under the microscope some additional very fine punctures may be seen; there is a longitudinal impression in front. The thorax has a bluer tint than the head; it is not much narrowed in front, broadest at the posterior angles, which are very acute and directed backwards; the disc has a few punctures; the sides are flattened, narrowly in front, broadly at the posterior angles; the lateral margins have a narrow vermiculate-striolate border. The elytra are convex, declivous posteriorly; at the base as broad as the thorax, gradually but not much widened to about three-fifths their length, and obliquely narrowed to the apex; dark violet-blue; distinctly punctured, the punctures of unequal size, irregular, not very close together.

One example from Bugaba has the disc of the thorax nearly black, with the sides green.

A single example from the Volcan de Chiriqui, probably referable to this species, has the head and thorax black and the elytra obscure green.

One example from Cerro Zunil and another from Volcan de Chiriqui agree with var. 2, except that they appear broader and have a slight coppery-brown tint on the thorax.

### 5. **Leiopleura viridifrons.**

Oblonga, convexa, nitida; capite antice viridi; thoracis disco convexo, punctulato, lateribus deplanatis, viridibus, margine antico cupreo, basi transversim sat profunde impressa; elytris subtiliter punctulatis.
Long. $1\frac{1}{2}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 5000 feet (*Champion*).

This species is very close to *L. crassa*; but the thorax is a little broader, the elytra are scarcely widened behind the middle, so that they are more gradually narrowed to the apex, and the sculpture is finer. The head in front is golden-green, less convex than in *L. crassa*, longitudinally impressed in the middle, finely rugose, and with some distinct punctures. The antennæ are brassy. The thorax has the margins more broadly rugose, the rugose surface occupying almost one-third of the width. The elytra have the surface less smooth, with fine striolæ between the punctures.

### 6. **Leiopleura pulchra.** (Tab. IX. fig. 4.)

Oblonga, convexa, nigra, nitida; capite thoraceque aureo-viridibus, hoc macula antice nigra; elytris violaceo-nigris, fascia lata mediana apiceque aureo-viridibus.
Long. $1\frac{3}{8}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

The head is almost smooth, but under the microscope is seen to be finely vermiculate-striolate, with some distinct punctures scattered over the surface; there is a longitudinal impressed median line. The antennæ are æneous. The thorax is sculptured somewhat in the same way as the head, but the punctures are moderately strong, not very close together; there is a little rugosity at the anterior angles; the disc is not so convex as in *L. crassa*, and the sides are not so impressed; there is a transverse impression on each side of the base. The elytra are convex, narrowly margined, the surface somewhat uneven, marked with rather large punctures, which are more numerous in the basal half; the lateral subhumeral impression is well marked, but without distinct limitations.

### 7. **Leiopleura puncticeps.**

Oblonga, convexa, nitida; capite sat crebre punctato, aureo-viridi; thorace punctato, medio fusco-nigro, lateribus late aureo-viridibus; elytris violaceo-nigris, convexis, crebre punctatis, vitta juxta suturam postice fascia mediana juncta, maculaque transversa ante apicem viridibus.
Long. $1\frac{1}{2}$ lin.

*Hab.* MEXICO, Acapulco in Guerrero (*Höge*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Panima, San Juan, and Chacoj in Vera Paz (*Champion*).

This species is very near to *L. pulchra*, but is rather narrower, the thorax is a little more narrowed in front, and the dark colour covers the whole disc. The elytra are distinctly but not much widened posteriorly, the broadest part being at about three-fifths their length; each elytron has a bright green stripe, commencing close to the scutellum and continued somewhat obliquely to the middle of the elytron, where it meets the slightly oblique transverse band; at a short distance from the apex there is a transverse spot, which does not reach the suture. The head is rather less convex than in *L. pulchra*, and is distinctly and much more closely punctured. The thorax has the sides scarcely impressed; the transverse basal impression is less marked, but limited externally by a fine, short, oblique ridge, which is generally of a coppery colour.

A specimen from Bugaba, apparently referable to the same species, has the basal stripe of the elytra almost separated from the median fascia, and the subapical spot more suffused.

Another specimen from Bugaba has the green stripe and fascia of the elytra replaced by a bright coppery-red band extending from the scutellum to the middle of the side of the elytron.

### 8. **Leiopleura venusta.**

Oblonga, convexa, nitida; capite viridi, crebre punctato; thorace viridi, medio infuscato, lateribus subtiliter rugosis; elytris nigro-violaceis, macula magna scutellari, altera laterali ad medium vix connexis viridibus, fascia lata ante apicem cyaneo-viridi.
Long. $1\frac{3}{4}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 3500 feet (*Champion*).

Closely allied to *L. pulchra*, but much larger and more convex. The head is more closely punctured. The thorax has the sides only slightly flattened near the posterior angles; the punctures are distinct, but not close together; the surface at the sides is densely and finely rugose, the rugosity extending at the base for nearly one quarter the width of the thorax. The elytra are relatively a little shorter and more obtuse at the apex, more convex, and less distinctly margined; dark violet; each elytron has a large green spot at the scutellum and a transverse lateral one at the middle; these spots are rugose, and are connected by a narrow line; the subapical band is broad, and gradually increases in width till it reaches the suture.

The following may be varieties of this species; they are not quite so broad as the type, but agree in all essential characters:—

*Var.* 1. Each elytron with an oblique green stripe extending from the scutellum to near the middle of the elytron, where it meets a fascia of the same width which extends to the margin. At a short distance from the apex there is a transverse narrow green fascia, which does not reach the suture.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

*Var.* 2. Similar to var. 1, but with the basal stripe abbreviated and the median fascia only extending to the middle of the elytron; these marks are bluish.

*Hab.* GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

## 9. **Leiopleura interrupta.**

Ovalis, convexa, nitida; capite viridi-cæruleo, punctulato; thorace antice angustato, convexo, nitidissimo, fusco-æneo, lateribus (præcipue angulis posticis) viridi-metallicis; elytris nigro-violaceis, ad medium fascia lata (ad suturam late interrupta) viridi, punctata, et ante apicem macula cyanea ornatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, Bugaba (*Champion*).

This species differs from *L. pulchra* in being more regularly oval, with the thorax more narrowed in front and the elytra more arcuate at the sides, their greatest width being at the middle. The head is very delicately punctured, the punctures moderately near together; there is an elongate fovea in front. The thorax is sparingly punctured; the sides are narrowly margined, scarcely flattened, with a shallow ill-defined transverse impression at the base near the hind angles. The elytra are convex, with the lateral impression well marked, with some close rugose punctuation at the suture near the scutellum, finely punctured elsewhere; the median fascia touches the margin, but does not reach the suture, with its posterior margin straight, the anterior margin oblique, so that the fascia gradually increases in width; the blue subapical spot is transverse, and does not reach the suture.

## 10. **Leiopleura viridicollis.**

*Brachys viridicollis*, Gory, Mon. iv. p. 343, t. 58. f. 339[1].

*Hab.* PANAMA, Bugaba 800 to 1500 feet (*Champion*).—GUIANA, Cayenne[1].

I am unable to separate the Central-American specimens from Gory's species.

## 11. **Leiopleura basalis.**

Oblongo-ovalis, convexa, nitida; capite viridi-aureo, punctato; thorace antice angustato, leviter convexo, disco antice fusco-nigro, basi cupreo-aurea, lateribus viridi-aureis, confertim subtiliter rugosis, haud deplanatis; elytris nigro-violaceis, postice arcuatim attenuatis, punctatis, medio fascia lata (ad suturam interrupta) rufo-cuprea, apice viridi.
Long. $1\frac{1}{4}$ lin.

*Hab.* GUATEMALA, Tamahu in Vera Paz (*Champion*).

This species is a little narrower than *L. pulchra*, with the thorax more narrowed in front and evenly convex. The elytra are scarcely as wide behind the middle as at the base, with the lateral impression not very deep. The head is distinctly punctured, as in *L. puncticeps*. The thorax has the front part of the disc brownish-black; the base is coppery, and the sides greenish-golden; the dark parts are shining and sparingly punctured, but the spot at the base and the golden margins are finely rugose and

punctured; there is scarcely any trace of the basal impression near the hind angles; but the very fine coppery ridge noticed in *L. puncticeps* may be seen.

### 12. **Leiopleura nigra.**

Oblongo-ovalis, convexa, nigra, nitida; thorace convexo, tenuiter punctulato, lateribus haud deplanatis; elytris basi sat fortiter punctatis, postice arcuatim attenuatis.
Long. $1\frac{3}{8}$ lin.

*Hab.* PANAMA, Bugaba (*Champion*).

This species is narrower than *L. pulchra*, with the thorax more narrowed in front, and with the elytra more gradually acuminate to the apex, more arcuate at the sides, and not angulated behind the middle. The head is moderately closely and distinctly punctured, with a shallow elongate puncture in front. The thorax is evenly convex and without lateral impressions; the base very lightly transversely impressed; under the microscope the surface is seen to be closely and finely vermiculate-striolate, gradually becoming slightly rugose at the sides; with small punctures at the base and sides. The elytra have the basal half moderately strongly punctured, the punctures not very close together; the lateral impression is well marked, and there is a shallow round impression behind the middle near the side.

### 13. **Leiopleura trivialis.** (Tab. IX. fig. 5.)

Elongata, angusta, convexa, nigra, nitida; capite antice æneo, convexo, medio longitudinaliter impresso, sat crebre punctato; thorace disco convexo, subtiliter parce punctulato, lateribus plerumque postice deplanatis, basi leviter transversim impressa; elytris convexis, postice acuminatis, dimidio basali sat fortiter punctato.
Long. $1\frac{1}{2}$ lin.

*Hab.* PANAMA, Taboga I. (*Champion*).

This species has the thorax very convex, with the sides impressed, very narrowly so anteriorly, but broadly at the posterior angles, the impressed part less shining than the disc and finely rugose. The elytra have the basal half strongly punctured, the punctures moderately close together, but very irregular; the apical half is very delicately punctured; the lateral impression is narrow and rugose; the sutural area near the apex is slightly flattened, so that towards the side there is a faint indication of a ridge.

### 14. **Leiopleura lateralis.**

Elongata, sat angusta, convexa, nigra, nitida; capite antice viridi, minus convexo, subtiliter rugoso, medio longitudinaliter impresso; thorace convexo, lateribus postice deplanatis, viridi marginatis, basi transversim leviter impressa; elytris punctatis.
Long. $1\frac{3}{8}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 3500 feet (*Champion*).

This species is less narrow than *L. trivialis* and also relatively shorter, and is some

what intermediate in form between *L. trivialis* and *L. crassa*. The head is flatter in front than in *L. trivialis*, and is densely rugose. The thorax is a little shorter and broader, and rather more narrowed in front; the disc is convex, and the sides are impressed, broadly so posteriorly, and margined with green; the green part is rugose, and there is a little green spot on each side of the base where the basal margin is reflexed. The elytra are less acuminate than in *L. trivialis*, being a trifle wider at the middle than at the base; the punctuation is not quite so strong, and the punctures are more separated.

### 15. **Leiopleura æneifrons.**

Elongatula, sat angusta, convexa, nigra, nitida; capite antice convexo, æneo, subtiliter punctulato, medio longitudinaliter impresso; thorace convexo, lateribus postice deplanatis, basi transversim leviter impressa; elytris punctatis.

Long. $1\frac{1}{8}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

This species closely resembles *L. lateralis*, but is smaller, differently coloured, and with quite differently sculptured head. The head is convex, longitudinally impressed in the middle, finely and delicately reticulate-striolate, with a few small punctures. The thorax is finely reticulate-striolate, moderately strongly punctured, the punctures not very close together; the sides are impressed, broadly so posteriorly; the base is also impressed, the impression becoming deep near the posterior angles. The elytra have the surface somewhat uneven, moderately strongly punctured at the base, more delicately punctured posteriorly, the punctures moderately close together.

The thorax is not quite black, but appears very slightly bronzy in some lights, and the anterior angles are tinted with green.

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The position of the following species is somewhat doubful; they appear, however, to be best associated with *Leiopleura*. They have the head unusually small; the tibiæ are slender and (except in *L. placida*) curved. The antennæ when at rest are lodged in grooves of the prothorax. There is a slight impression for the reception of the intermediate legs; the posterior legs are free. In only two cases are the males known, and both these have a multidentate apical segment to the abdomen.

### 16. **Leiopleura convexa.** (Tab. IX. fig. 6.)

Elliptico-ovalis, convexa, brunneo-ænea, nitida; thorace convexo, parce punctato, angulis posticis vix impressis; elytris convexis, postice arcuatim angustatis, sat fortiter punctatis.

Long. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

Very convex, almost as much narrowed anteriorly as posteriorly. The head is convex, longitudinally impressed in the middle, finely reticulate-striolate, with some punctures here and there. Thorax evenly convex, with no basal impression, the margins scarcely impressed at the posterior angles; finely reticulate-striolate, with a few punctures scattered over the surface. The elytra are moderately strongly punctured, the punctures not very far apart, rather less distinct posteriorly.

### 17. **Leiopleura parvula.** (Tab. IX. fig. 7.)

Convexa, nigra, nitida; capite parvo, medio leviter sulcato; thorace antice oblique angustato, parce punctulato; elytris purpurascentibus, striato-punctatis, postice acuminatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, David (*Champion*).

The head is closely reticulate-striolate, longitudinally impressed in front, narrow between the eyes, with a few shallow punctures; the eyes are not prominent. The thorax is obscurely tinted with purple; closely and finely reticulate-striolate, but on the disc the striolæ are in parts almost effaced; there are a few shallow punctures rather widely separated from each other. The elytra are very convex, with a light impression at about one-third from the apex, leaving the suture beyond this more raised; they are punctured in lines, the punctures at the base being rather strong but diminishing posteriorly; the interstices have also some small punctures.

A single example from Panzos in Vera Paz appears to be referable to the same species.

### 18. **Leiopleura difficilis.**

Convexa, nitida, nigra; capite antice aureo-æneo; thorace obscure brunneo-æneo, angulis anticis aureo-tinctis, parce punctato; elytris crebre punctatis, ante basin transversim plicatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* PANAMA, Caldera in Chiriqui 1200 feet (*Champion*).

This species closely resembles *L. parvula*, but the head is not quite so narrow and is a little more impressed on the forehead; and the elytra are somewhat longer, rather less convex, and slightly narrowed before the apex. The head in front is brassy, with the reticulate striolation deeper, so that the surface is more rugose. The thorax is similar, but has the region of the anterior angles brassy; the reticulation is more distinct, and verges into rugosity at the sides; the punctures are small but distinct, and are plainly visible towards the sides, which they are not in *L. parvula*. The elytra have the punctuation rather strong, close, and confused, and near the base the surface is slightly wrinkled.

A specimen from Belize appears to be referable to the same species, but it has no transverse wrinkles on the elytra.

### 19. **Leiopleura inconspicua.**

Convexa, nitida, subtus nigra; capite thoraceque cupreis; elytris rufo-cupreis (vel obscure æruginosis), crebre punctatis.
Long. $1\frac{3}{8}$ lin.

*Hab.* British Honduras, Belize (*Blancaneaux*).

This is a slightly broader species than *L. parvula*, with the thorax more obliquely narrowed in front, the elytra shorter and a little less acuminate at the apex. The head is rather more deeply sulcate, with the reticulate striolation very delicate and scarcely distinguishable in parts even under the microscope; there are four or five large shallow punctures in a line on each side. The thorax is broader, almost smooth, very slightly sinuate at the sides about the middle, sparingly punctured; the punctures small but distinct, more distinct than in *L. parvula*. The elytra are moderately strongly punctured in lines, with the intervals only slightly less strongly punctured.

A second specimen has the elytra obscure dark green.

### 20. **Leiopleura polita.** (Tab. IX. fig. 8.)

Convexa, nitidissima, subtus nigra; capite thoraceque læte cupreis, punctatis; scutello brunneo-cupreo; elytris viridi-cyaneis, striato-punctatis.
Long. $1\frac{3}{4}$ lin.

*Hab.* Panama, Bugaba (*Champion*).

The head is finely rugose, with rather large shallow punctures placed not very close together. The thorax is finely reticulate-striolate, slightly rugose at the sides; punctured, the punctures small but very distinct, not very close together. The scutellum is brown. The elytra are dark bluish-green, finely striate-punctate, with finer punctures scattered over the surface. The apex of the abdomen in the male is furnished with about twelve teeth, those in the middle are long and gradually acuminate, one or two at each end being smaller; the two sides are not quite alike in the specimen described.

### 21. **Leiopleura longula.**

Elongata, convexa, polita, supra cyanea, purpurascens; thorace parce punctato, linea mediana virescente; scutello virescente; elytris obscure punctulatis.
Long. 2 lin.

*Hab.* Mexico, Cordova (*Sallé*).

This is a much more elongate species than *L. polita*, with the thorax not quite so obliquely narrowed in front. The elytra are much longer, a little narrowed below the shoulders, a little broader at the posterior two-thirds than at the base, and then gradually narrowed to the apex. The head is rather deeply longitudinally impressed in the middle, finely and very closely reticulate-striolate, with a few small punctures. The

thorax is almost smooth; under the microscope the sides are seen to be very delicately reticulate-striolate; punctured, the punctures very small at the front part of the disc, larger posteriorly, not very close together, but on each side of the base a few of them are transversely confluent. The elytra are punctured, the punctures small and very distinct and some of them ranging themselves in lines.

### 22. **Leiopleura placida.**

Ovalis, convexa, nitida; capite virescente; thorace nigro-cyaneo, subtiliter parce punctato; elytris cyaneis, sat fortiter punctatis.
Long. $1\frac{1}{2}$ lin.

*Hab.* PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

This species is shorter and more ovate than *L. polita*. The front of the head and sides of the thorax are slightly tinted with bluish-green; the disc of the thorax is blackish-blue, and the elytra are steel-blue. The head has scarcely any longitudinal impression; it is reticulate-striolate, but the striolation is somewhat interrupted and has a tendency to run in a transverse direction; there are some distinct punctures placed not very close together. The thorax is evenly convex, finely margined at the sides, finely reticulate-striolate, with a slight tendency to rugosity; punctured, the punctures distinct and not very close together. The elytra are convex, scarcely broader behind the middle than at the shoulders, arcuately narrowed to the apex; punctured, the punctures moderately strong at the base, delicate at the apex, irregular and of unequal size. The intermediate tibiæ are nearly straight, a little wider near the base than at the apex.

### 23. **Leiopleura jubilans.**

Oblongo-ovalis, parum convexa, supra rufo-cuprea, nitida; capite antice obscure æruginoso, longitudinaliter sulcato; thorace parce punctato; elytris punctulatis.
Long. $1\frac{1}{4}$ lin.

*Hab.* BRITISH HONDURAS, Belize (*Blancaneaux*).

The head is rather deeply longitudinally sulcate, very delicately reticulate-striolate, and with a few punctures. The thorax is evenly convex, very delicately reticulate-striolate; punctured, the punctures very distinct, not very close together. The scutellum is rather broad, triangular. The elytra are not very convex, as wide at the middle as at the base, gently sinuate below the shoulders, arcuately attenuate at the apex, lightly impressed at the side below the shoulder and behind the middle; the sutural area is also very lightly impressed at the middle, and there is a shallow impression near the suture not far from the apex; the punctuation is distinct, very delicate at the apex, irregular, the punctures not very far apart.

This species bears a great resemblance to *Lius dissimilis*, but it has the head very much smaller, and the elytra a little shorter and less acuminate.

## CALLIMICRA.

*Callimicra*, Deyrolle, Ann. Soc. Ent. Belg. viii. p. 219 (1864).

Five species of this genus are described, all from Brazil. Six new species from Central America are here added.

### 1. **Callimicra dimidiata.** (Tab. IX. fig. 9.)

Elongato-oblonga, convexa, nitida; capite thoraceque rufo-cupreis; scutello cupreo-æneo; elytris virescenti-cyaneis, crebre punctatis.
Long. 2 lin.

*Hab.* PANAMA, Bugaba (*Champion*).

The head is gently convex, with a longitudinal impressed line and a shallow fovea in front, closely rugose, punctured, the punctures not very close together. The thorax is convex, with the posterior angles and the base impressed; finely reticulate-striolate and distinctly punctured, the punctures not very far apart. The elytra are convex, with a very slight impression below the shoulder at the side; rather finely and moderately closely (but irregularly) punctured, with two or three lines of fine punctures on each elytron.

### 2. **Callimicra obtusa.**

Elongato-oblonga, convexa, nitida, cyanea; capite aureo, sat crebre fortiter punctato; thorace evidenter punctulato, limbo aureo-tincto; elytris convexis, punctatis, ad apicem obtuse rotundatis.
Long. $1\frac{7}{8}$ lin.

*Hab.* PANAMA, Bugaba (*Champion*).

This species is a little shorter than *C. dimidiata* and slightly less broad, but has the elytra very obtusely rounded at the apex. The upper part of the head is shining, with scarcely any trace of striation, strongly punctured, the punctures rather near together; the lower part of the face is rugose; there is a well-marked central fovea. The thorax has the disc very convex, with scarcely any trace of striolation, rather strongly punctured, the punctures generally moderately close together; the sides have a rather narrow, impressed, finely rugose margin; the base is also transversely impressed, with a rugose patch on each side; near the posterior angle there is a fine oblique raised line. The scutellum is golden-green. The elytra have the lateral subhumeral impression more marked than in *C. dimidiata*; the surface is slightly uneven, but not striolate, more strongly punctured than in *C. dimidiata*, the punctures moderately close together.

### 3. **Callimicra violaceipennis.**

Elongato-oblonga, convexa, nitida; capite thoraceque viridibus; elytris violaceis.
Long. 2 lin.

*Hab.* MEXICO, Playa Vicente (*Sallé*).

This species is very close to *C. obtusa*, but is relatively longer and a little less broad. The head is closely vermiculate-striolate, with the punctures less strong and not quite so close together; the impression in front is more elongate. The thorax is very similar, but differently coloured, and has the punctuation rather finer; the lateral margins are scarcely impressed and are less distinctly rugose; and the fine ridge at the side is not continued to the posterior angles.

### 4. **Callimicra lucida.**

Elongata, convexa, nitida; capite thoraceque aureo-viridibus; elytris cyaneis.
*Var.* Capite thoraceque aureis.
Long. $1\frac{7}{8}$ lin.

*Hab.* PANAMA, Bugaba (*Champion*).

This insect is longer and narrower than any of the foregoing species. It is very close to *C. violaceipennis*, but narrower; some of the specimens have the head and thorax pale bluish-green, and others have these parts golden; these differences may be sexual. The specimens with the head bluish-green have the front very delicately reticulate-striolate and punctured, the punctures distinct and slightly separated from each other; there is a shallow, longitudinal, median impression, with a fovea rather below the middle. The specimens with the head golden have the front rugose, with the punctures stronger and a little closer, and the fovea is large and deep. The thorax has the convex disc almost smooth, moderately strongly punctured, the punctures not very close together, the impressed margins and the base on each side rugose (rather more rugose in the specimens with the golden colour); near the side and a little removed from the hind angles there is a fine, short, raised line—in the examples with the bluish colour this line more nearly extends to the hind angles. The scutellum is bronzy. The elytra are dark steel-blue or inclined to violet, with the surface slightly uneven and punctured, the punctures not very deep and not very close together.

### 5. **Callimicra breviuscula.**

Elongato-oblonga, convexa, nitida; capite thoraceque cupreo-aureis, punctulatis; elytris cyaneis.
Long. $1\frac{1}{2}$ lin.

*Hab.* MEXICO, Orizaba, San Miguel del Rio (*Sallé*).

This species closely resembles *C. obtusa*, but is not quite so obtuse at the apex of the elytra. The head is rugose and punctured, the punctures not very close together. The thorax has the disc convex, the base and posterior angles impressed; the surface

is reticulate-striolate on the disc, the reticulation gradually changing into rugosity at the sides; the punctures are very distinct and not very close together. The scutellum is brassy. The elytra are dark blue, somewhat strongly punctured, the punctures rather close together.

In two examples the front of the head is green, and the rugosity appears to be a little finer; and the sides of the thorax are also more impressed. These may be males.

A specimen from Oaxaca with the elytra green appears to be referable to the same species.

Three examples from Capetillo, Guatemala (*Champion*), may belong to this species, but two of them (♂?) have the thorax more broadly impressed at the sides as compared with the supposed males alluded to above.

### 6. **Callimicra angustula.** (Tab. IX. fig. 10.)

Elongata, angusta, convexa, nitida; capite magno thoraceque aureis, vel pallide cæruleis; elytris cyaneis. Long. $1\frac{1}{2}$ lin.

*Hab.* MEXICO, Tuxtla (*Sallé*); GUATEMALA, San Juan in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

There is a little difference in the colour of the head and thorax, as in *C. lucida*; but the difference is much less marked, and there is a slight corresponding difference in the sculpture of the head. The head is large, convex, very delicately reticulate-striolate, and punctured, the punctures not very near together; the lower part of the face transversely rugulose, the rugose surface more extended in the specimens with the golden colour. The thorax is delicately reticulate-striolate and punctured, the punctures small but distinct, slightly separated from each other; the margins are narrowly impressed; the base is also transversely impressed; close to the lateral margin and parallel to it there is a fine but well-defined ridge, commencing about the middle of the side and nearly reaching the posterior angles. The scutellum is brownish. The elytra are steel-blue, the surface slightly uneven and wrinkled, punctured, the punctures irregular, moderately large, and not distinctly defined. The body beneath and legs black.

A single example from El Tumbador, Guatemala, entirely of a dark steel-blue above, may be referable to the same species.

# SUPPLEMENT.

During the publication of the foregoing account of the Central-American Buprestidæ several small collections have been received, containing many species new to our fauna and additional specimens of recorded species from localities other than those already noted. Hence this Supplement.

## CHALCOPHORA (p. 1).

### **Chalcophora virginiensis** (p. 2).

To the localities given, add :—Mexico, Zapotlan in Jalisco (*Höge*); Honduras, Bonacca Island, Bay of Honduras (*Gaumer*).

In my remarks on this species mention is made of two Mexican examples which differed from the typical form in having the smooth parts of the thorax wider and the sides sinuate before the posterior angles. A good series of this form has now been received from Zapotlan (*Höge*), but I still hesitate to give it a distinctive name. All the specimens agree in having the smooth parts, and especially the median line, broader than in any North-American examples before me; but there is a specimen in the British-Museum Collection labelled Mexico which, while agreeing in general aspect and the sinuous sides of the thorax with the others from Zapotlan, has the median smooth line of the thorax narrow. The specimens from Zapotlan vary greatly in the form of the thorax, some having the sides very strongly angular before the middle and sinuous before the posterior angles; most of them have the sinuosity only moderate, and one or two examples have the sides almost parallel behind. The elytra in the Zapotlan specimens have the longitudinal submarginal impression at their apex narrow and rather sharply defined, a character in which they differ from the North-American examples. The two Mexican specimens in the British Museum are slightly intermediate.

## PELECOPSELAPHUS (p. 3).

### **Pelecopselaphus acutus** (p. 3).

To the locality given, add :—Guatemala, Chimaltenango (*Conradt*); Panama, Bugaba, 800 to 1500 feet (*Champion*).

## MIXOCHLORUS (to precede the genus *Agæocera*, p. 4).

*Mixochlorus*, Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 177.

The species upon which this genus is founded has much the appearance and coloration

of *Engyaulus* (Tab. IV. fig. 9). Its affinity with *Agæocera* was not noticed until too late for insertion in the proper place.

### 1. **Mixochlorus suturalis.** (Tab. IX. fig. 12.)

*Mixochlorus suturalis*, Waterh. Trans. Ent. Soc. Lond. 1887, p. 178 [1].

*Hab.* HONDURAS [1] (*Brit. Mus.*).

The type of this species measures 6 lines in length. It is of a bright green colour, having the top of the head, a stripe on each side of the disc of the thorax, and a broad stripe on the elytra dark coppery. The thorax has a well-marked longitudinal median impression, which is green, a little narrowed at the anterior part, and near each side there is an elongate impression extending from the base to within one-third of the anterior margin; the lateral impression is shining and very strongly and distinctly punctured. The prosternum is strongly punctured; the punctures are rather near together, but are not crowded. The terminal segment of the abdomen is semicircularly emarginate at the apex.

### 2. **Mixochlorus lateralis.**

Viridis, supra subsurdus; capitis vertice, thoracis disco (macula basali excepta) elytrorumque vitta lata brunneo-cupreis.

Long. $4\frac{3}{4}$ lin.

*Hab.* MEXICO, Orizaba (*Sallé*).

The front of the head is moderately finely punctured as compared with *M. suturalis*; the punctures near together, but not crowded. The thorax is lightly transversely impressed at the anterior margin; the disc is slightly raised anteriorly, the coppery colour extending over the anterior half of the median impression, which is not so distinct as in *M. suturalis*, and is more sparingly punctured posteriorly; the lateral impression is sparingly punctured, more ovate, and does not extend much beyond the middle of the length. The elytra have the sutural stripe bluish-green, the suture itself being purple; the narrow margin is dark blue, with a little green at the shoulder. The prosternum is very coarsely punctured, and the punctures are crowded. The terminal segment of the abdomen is truncate at the apex, or appears slightly emarginate when viewed in some positions.

It is not impossible that *M. lateralis* and *M. suturalis* may be sexes of one species, but in the absence of any evidence that this is so I prefer at present to consider them distinct.

## AGÆOCERA (p. 4).

### **Agæocera gigas** (p. 4).

To the Mexican localities given, add:—Ventanas in Durango (*Höge*, *Forrer*), R. Papagaio in Guerrero 1200 feet (*H. H. Smith*).

The two examples from R. Papagaio have the suture of the elytra bright coppery-red.

### 3. **Agæocera gentilis.**

*Halecia gentilis*, Horn, Trans. Am. Ent. Soc. xii. p. 144[1].

*Hab.* North America, South-western Texas [1].—Mexico [1], Coahuila [1], Villa Lerdo in Durango (*Höge*).

This species differs from *A. gigas* in having the thorax rather shorter and more rounded in front, and more evenly and closely punctured.

The short antennæ and the general form of this species agree well with *Agæocera*, but are quite foreign to *Halecia*.

## EUCHROMA (p. 5).

### **Euchroma goliath** (p. 5).

To the localities given, add:—Mexico, Teapa in Tabasco (*Höge*), Temax in North Yucatan (*Gaumer*); British Honduras, Cayo (*Blancaneaux*); Guatemala, Capetillo (*Rodriguez*); Panama, Bugaba 800 to 1500 feet (*Champion*).

## HALECIA (p. 5).

Dr. Horn (Trans. Am. Ent. Soc. xii. p. 145), alluding to my remarks on the geographical distribution of this genus, states: "I am not aware of any species from the Atlantic region which can be referred to *Halecia*." The North-American species to which I alluded is *H. erythropus*, placed by Mr. E. Saunders in his Catalogue under *Halecia*, and I think rightly so. I find, however, that the species is doubtfully North-American.

### 1 (a). **Halecia debyi.**

Sat brevis, crassa, aureo-viridis, nitida; capite crebre fortiter punctato, antice medio leviter impresso cupreo; thorace convexo, antice paullo angustato, crebre fortiter punctato, disco vittis duabus latis maculaque laterali nigro-cyaneis; elytris post medium latioribus, ad apicem oblique angustatis, costis cyaneis (hic et illic interruptis) ornatis, interstitiis crebre rugoso-punctatis.

Long. $8\frac{1}{4}$ lin.

*Hab.* Guatemala (*Brit. Mus., J. Deby*).

This species most nearly approaches *H. chrysodemoides*; but is a shorter and more robust insect, and in its form and less narrowed thorax more nearly resembles *Agæocera* than any species of *Halecia* known to me. Each elytron has four well-marked dark blue costæ—the first extends the entire length of the elytron, but is slightly interrupted near the base and at a short distance from the apex; the second is abbreviated at the base, and has an interruption at the middle of the elytron; the third is abbreviated at the base and apex; the fourth extends from the shoulder to the apex, but is slightly interrupted below the shoulder.

### 1 (B). **Halecia laticollis.**

Depressa, nitida, subtus aureo-viridis; capite viridi, fortiter punctato, vertice vittisque duabus purpureo-cupreis; thorace sat lato, ante medium paullo angustato, cupreo-purpureo, sat crebre punctulato, linea mediana (basi impressa) marginibusque lateralibus viridi-aureis, his medio leviter incrassatis, ad basin sinuatis, basi prope angulos posticos fovea impressa; scutello viridi; elytris basi quam thorax vix latioribus, post medium paullo ampliatis, dein ad apicem angustatis, purpureis violaceo-tinctis, singulis maculis viridibus septem ornatis, margine fortiter dentato.

Long. $8\frac{1}{2}$ lin.

*Hab.* PANAMA, Chiriqui (*Trötsch*).

This species is allied to *H. octopunctata*, or perhaps more nearly to *H. batesi*, Saund., but is a shorter and broader insect. The upper part of the thorax is dark brownish-purple verging into coppery-red near the front angles; the green of the lateral margin is continued a little way round the anterior angles. The elytra are rather flat, and have little trace of striæ; each elytron has the following green marks:—a triangular spot below the humeral callus, with the green continued along the margin for some distance; a round spot at the base; an oblique oval spot near the suture at one quarter from the base; a transverse spot in the middle; two spots a little less than halfway between middle spot and the apex; and a short stripe at the apex close to the suture. The marginal teeth of the elytra are very strong; the one immediately before the apex is acute and directed slightly outwards, and the sutural angle itself is very acute and turned obliquely inwards—in this respect *H. laticollis* differs from any other members of the genus known to me.

### 3 (A). **Halecia suffusa.**

Brunneo-cuprea, nitida, pallide flavo-griseo-pulverosa; capite rufo-cupreo, sat crebre punctulato, medio leviter impresso; thorace cupreo, nitido, antice angustato, disco (linea mediana excepta) maculaque laterali ante medium viridi-cyaneis, angulis posticis sat acutis, divergentibus; elytris brunneo-cupreis, tenuiter punctato-striatis, cyaneo-maculatis; abdomine æruginoso-tincto; tarsis cæruleis.

Long. $6\frac{3}{4}$ lin.

*Hab.* PANAMA, David in Chiriqui (*Champion*).

This species has the form of *H. beltii* (Tab. I. fig. 6), but is a trifle narrower, and has the elytra more acuminate at the apex. It differs from *H. cyaneo-notata*, Saund., which it still more nearly resembles, in having the posterior angles of the thorax acute and diverging, and in having the elytra less prolonged at the apex. Each elytron has the following dark blue spots:—one on the humeral callus; one near the base and close to the suture; three spots, one below the other, in a line down the middle of the elytron, the hind one small and transverse; and an elongate spot near the apex. The margins of the elytra are not dentate.

### 3 (B). **Halecia pulverulenta.**

Supra ænea, subtus æruginosa, nitida, flavo-pulverulenta; capite crebre fortiter punctato, antice canaliculato; thorace antice sat angustato, punctato; elytris punctato-striatis, marginibus subtus tarsisque cæruleis.

Long. $5\frac{1}{2}$–$7\frac{1}{4}$ lin.

*Hab.* PANAMA, Bugaba in Chiriqui 800 to 1500 feet (*Champion*).

This species resembles *H. beltii* in form, but is of a more bronzy colour, and has no spots. The thorax has a median impressed line which terminates posteriorly in a shallow fovea; the punctuation is moderately strong—the punctures on the disc are not very close together, but at the sides they are crowded and coarser. The elytra are moderately strongly punctured in lines, the lines in parts impressed; there is a very shallow, scarcely perceptible impression at the side below the shoulder, and a second oblique one, rather more noticeable at the side, about the middle; behind this there is a slight swelling followed by a fairly well-marked impression.

## GYASCUTUS (p. 7).

### **Gyascutus cælatus** (p. 7).

To the Mexican localities given, add:—Chihuahua city (*Höge*).

Specimens of this species vary from $10\frac{1}{2}$ to $14\frac{1}{2}$ lines in length. It almost constantly has a large brassy patch on each elytron, which is not mentioned in Leconte's description.

### 2. **Gyascutus planicosta.**

*Chalcophora planicosta*, Leconte, Proc. Ac. Phil. 1858, p. 66[1].

*Gyascutus planicosta*, Leconte, Trans. Am. Phil. Soc. 1860, p. 189, t. 12. fig. 1.

*Hab.* NORTH AMERICA, San Diego[1].—MEXICO, Northern Sonora (*Morrison*), Villa Lerdo in Durango (*Höge*).

In the series of specimens obtained by Mr. Morrison there is little variation in the size of the individuals, but those from Villa Lerdo vary from 7 to $13\frac{1}{2}$ lines in length.

## HIPPOMELAS (p. 7).

### **Hippomelas saginatus** (p. 8).

To the Mexican localities given, add:—Atlixco, Matamoros Izucar and Cholula in Puebla, Guadalajara in Jalisco, Huetamo in Michoacan, Cuernavaca in Morelos (*Höge*), Vente de Zopilote 2800 feet, Savana Grande 3000 feet, both in Guerrero (*H. H. Smith*).

The specimens from Cholula are all of a blue colour except two, one of which is æneous, the other intermediate.

The specimens from Huetamo are all æneous, as are also those from Venta de Zopilote and Savana Grande.

The specimens from Cuernavaca are brassy-green, with strong blue or violet tints.

### 2. **Hippomelas sphenicus.**

*Buprestis sphenicus*, Leconte, Proc. Ac. Phil. 1854, p. 83[1], & 1858, p. 67.
*Gyascutus sphenicus*, Leconte, Trans. Am. Phil. Soc. xi. p. 190 (1860).

*Hab.* NORTH AMERICA, Texas (*Schott*[1]).—MEXICO, Monclova in Coahuila (*Dr. Palmer*), Alamos (*Buchan-Hepburn*), Villa Lerdo in Durango (*Höge*).

This species is so very close to the blue form of *H. saginatus* that it might easily be mistaken for it. It differs in having the thorax less narrowed in front, with the sides much more rounded, and the posterior angles not or scarcely diverging. The elytra have a conspicuous yellow border at the base, and the abdomen has a row of greyish-yellow pubescent spots at the sides.

Some of the specimens are of a brassy-black above.

## PSILOPTERA (p. 8).

### **Psiloptera polymita** (p. 8).

To the locality given, add:—Jalapa, Actopan (*Höge*), Acaguizotla in Guerrero 3500 feet (*H. H. Smith*).

### 1 (A). **Psiloptera obscura.**

*Lampetis obscura*, Thoms. Typi Bupr., Append. p. 11[1].

*Hab.* MEXICO[1], Yolos, Oaxaca (*Sallé*).

### 1 (B). **Psiloptera severissima.**

*Lampetis severissima*, Thoms. Typi Bupr., Append. p. 11[1].

*Hab.* MEXICO[1].

I have not seen an example of this species.

### 1 (C). **Psiloptera geniculata.**

Elongata, elliptica, crassa, fusco-cuprea, nitida; capite nitido, grosse punctato; thorace transverso, ante medium oblique angustato, parce grosse punctato, lateribus postice fere parallelis; elytris sat parallelis ad apicem gradatim acuminatis, fortiter striato-punctatis, interstitiis alternatim plagis parvis rugosis interruptis; femoribus cupreis apice viridi- et purpureo-tinctis, tibiis cyaneis, tarsis viridibus.

Long. $6\frac{1}{2}$–$11\frac{1}{2}$ lin.

*Hab.* MEXICO, Temax in North Yucatan (*Gaumer*).

Closely allied to *P. polymita*, but a little broader and less convex, with the thorax more angulated at the sides. The head is much less closely punctured and more shining, the punctures larger, leaving smooth raised intervals; with a line of pubescence bordering the eye. The thorax has the punctures large and deep and much less numerous, and not crowded towards the sides except at the extreme lateral margin and at a spot behind each eye. The elytra are punctured in lines, the punctures large and

deep; the alternate interstices are more convex towards the apex than the others, and are interrupted by numerous small rugose impressions, the sublateral one appearing as a line of elongate shining swellings; the lateral incrassate margin is thicker than in *P. polymita*, and polished*; the apex of each elytron is obliquely truncated, the outer angle dentiform. The antennæ are green, except the basal joint, which is coppery. The femora are coppery (viewed from below), purple at the extreme apex, and with some green and golden just before the apex. The metathoracic episterna are closely and comparatively finely punctured and pubescent. The apical segment of the abdomen is also finely punctured and pubescent, with a bare, more coarsely punctured median line.

**Psiloptera monilis** (p. 8).

To the localities given, add:—Mexico, Jalapa in Vera Cruz (*Morrison*, *Höge*), Actopan (*Höge*).

The localities Escuintla and Costa Rica should be transferred to *P. guatemalensis*.

3 (a). **Psiloptera guatemalensis.**

*Lampetis guatemalensis*, Thoms. Typi Bupr., Append. p. 12[1].

*Hab.* Guatemala[1], Coban (*Sallé*), Escuintla (*Champion*), Chimaltenango (*Conradt*); Costa Rica (*Van Patten*).

If the examples from Sallé's collection bearing this name are correctly determined (and they appear to be so), I think it very doubtful whether *P. guatemalensis* should be separated from *P. monilis*. The specimens, however, from the above-mentioned localities appear to be smoother than the ordinary form of *P. monilis*.

**Psiloptera chalconota** (p. 9).

To the Mexican localities given, add:—Amula 6000 feet and Iguala, both in Guerrero (*H. H. Smith*).

**Psiloptera hirtomaculata** (p. 10).

To the locality Panama, add:—Tolé (*Champion*).

**Psiloptera dilaticollis** (p. 11).

To the Mexican localities given, add:—Villa Lerdo in Durango (*Höge*).

* The specimens of *P. obscura* (Th.) have this margin more or less transversely finely wrinkled.

DICERCA (p. 11).

**Dicerca æneovaria** (p. 12).

To the Mexican locality given, add :—Jalapa (*Höge*).

BUPRESTIS (p. 13).

**Buprestis catoxantha** (p. 13).

To the Mexican localities given, add :—Jalapa (*Höge*).

**Buprestis piliventris** (p. 13).

To the Mexican locality given, add :—Tapachula in Chiapas (*Höge*).

CINYRA (p. 15).

3. **Cinyra uniformis.**

Elongata, sat nitida, ænea cupreo-tincta ; capite creberrime fortiter punctato, griseo-piloso ; thorace antice paullo angustiore, disco parce, lateribus crebre fortiter punctatis, his fere rectis ; elytris purpurascentibus, sulcatis, sulcis tenuiter punctatis, interstitiis dorsalibus parce, lateralibus crebrius sat fortiter punctatis, guttis numerosis aureis punctatis ornatis, singulis elytris apice oblique truncatis, bidentatis.

Long. $7\frac{1}{2}$ lin.

*Hab.* Mexico, Atlixco in Puebla (*Höge*).

This species has somewhat the form of *C. costulata* (Tab. I. fig. 20) ; but the head is a trifle wider, the thorax a little less narrow, with the sides very gently arcuate, almost straight, and the elytra have the apical teeth stronger and the sutural one rather more produced. The thorax is rather strongly punctured, the punctures being crowded at the sides but irregular and more separated on the disc ; there is a very slight median longitudinal impression in front, and a slight fovea in the middle of the base and an inconspicuous one close to the base at a short distance from the posterior angles ; the lateral carina (viewed from the side) is quite straight, and terminates in a smooth spot a little beyond the middle. The elytra have very numerous small brassy spots, which are quite irregular and inconspicuous. The prosternum has a few small punctures.

4. **Cinyra æqualis.**

Elongata, convexa, subparallela, obscure purpurascenti-cuprea, passim æneo-viridi-tincta ; capite creberrime sat fortiter punctato, brevissime griseo-piloso ; thorace antice paullo angustato, crebre sat fortiter punctato ; elytris sulcatis, interstitiis sat convexis, sat crebre evidenter punctatis, singulis elytris ad apicem truncatis, bidentatis ; prosterno æneo, crebre punctato.

Long. $4\frac{1}{2}$–$5\frac{1}{2}$ lin.

*Hab.* Mexico, Ventanas in Durango (*Höge*).

This is a rather more parallel species than the last, with narrower head and with the elytra less gradually narrowed at the apex. The general colour is dull reddish-coppery verging into purple, generally with obscure green tints on the dorsal surface, especially

on the disc of the thorax; the lower part of the face is generally green. The thorax is evenly convex, with a trace of a longitudinal median impression; rather strongly punctured, the punctures crowded at the sides, slightly separated on the disc; the lateral carina is not quite so straight as it is in *C. uniformis*, and is continued to near the front angles. The elytra are sulcate, with the interstices posteriorly convex, rather strongly punctured, the punctures slightly separated on the disc, but more crowded at the sides. The apex of each elytron has two nearly equal teeth, the sutural one not being produced beyond the outer one.

### 5. **Cinyra sexspinosa.**

Elongata, parum convexa, omnino ænea, crebre punctata; elytris striatis, interstitiis postice convexis, singulis elytris ad apicem trispinosis.

Long. $6\frac{1}{2}$ lin.

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

The thorax is rather strongly punctured, the punctures crowded at the sides, slightly separated on the disc; there is a very slight impression on each side of the base and a shallow elongate fovea in the middle of the base; the lateral carina does not reach the middle of the side. The elytra are rather deeply striated, the striæ punctured; the interstices are posteriorly somewhat convex, the second and fourth more convex than the others; the punctures are rather strong, slightly separated on the dorsal interstices, close together on the lateral ones; each elytron has at the apex three acute teeth, the one at the suture and the one at the end of the second stria equal, the third at the end of the fourth interstice more removed from the apex. The prosternum is rather finely and not very closely punctured.

## ISOPHÆNUS. (Tab. IX. figg. 11, 11 *a–c.*)

(To precede the genus *Melanophila*, p. 16.)

Elongate, parallel. Mentum very short and transverse, rounded at the sides, membranous anteriorly. Maxillary palpi with the apical joint twice as long as broad, subcylindrical. Antennæ with the pores in a large cavity at the lower anterior portion of the joints, the cavities more lateral at the apical joints (fig. 11 *a*). Thorax transverse-quadrate. Scutellum rather small, pentagonal. Elytra narrower in the middle than at the base or apex, leaving the abdomen exposed at the sides, rounded and denticulate at the apex. Prosternal process acuminate at the apex, scarcely widened behind the coxæ (fig. 11 *b*). Sternal cavity formed by the mesosternum (which is rather large) and metasternum; the posterior margin of the mesosternum, however, is slightly visible. Metathoracic episterna rather broad, somewhat narrowed posteriorly, the epimera triangular, not covered by the elytra. The posterior coxæ are gradually wider internally. The legs are slender; the tibiæ straight; the tarsi long, slender, the basal joint of the posterior pair as long as the following four joints together, hairy, especially beneath, the second and third joints with a fringe of white hairs at the apex representing the lamina, the fourth joint with a distinct lamina (fig. 11 *c*).

I am in doubt as to the affinities of this genus, but on the whole it seems best to place it before *Melanophila*. The system of coloration and sculpture is more that of *Anthaxia*.

### 1. **Isophænus parallelus.** (Tab. IX. figg. 11–11 *c*.)

Elongatus, parallelus, viridi-cæruleus, parum nitidus; capite rugoso, vertice linea mediana nigra leviter impressa; thorace transverso, confertim rugoso, antice plaga triangulari nigra, subtilius rugosa ornato, lateribus leviter arcuatis, basi fere truncata, angulis obtusiusculis; elytris rugosis, fascia ad medium nigra. Long. $3\frac{1}{2}$ lin.

*Hab.* MEXICO, Tepetlapa in Guerrero 3000 feet (*H. H. Smith*).

The head is a little convex in front, the clypeus very gently emarginate; the labrum leathery. The antennæ are placed in a socket under a slight but distinct ridge. The thorax has its anterior margin very slightly advanced in the middle; the base is almost straight. The elytra are scarcely as broad as the thorax, narrowed at their middle, rugose, more asperate towards the apex.

## MELANOPHILA (p. 16).

### **Melanophila limbata** (p. 16).

To the Panama locality given, add:—Bugaba 800 to 1500 feet (*Champion*).

### **Melanophila atra** (p. 17).

To the localities given, add:—MEXICO, Ciudad in Durango 800 feet (*Forrer*); GUATEMALA, Panzos and Coban in Vera Paz (*Conradt*).

## ANTHAXIA. (To precede the genus *Polycesta*, p. 18.)

*Anthaxia*, Eschscholtz, Zool. Atlas, i. p. 9 (1829).

The species of this genus, as at present constituted, are found in most parts of the World. The Central-American representatives belong to a peculiar group, all of which are American, and of which *Anthaxia vitticollis*, Gory, may be taken as the type. The species much resemble *Agrilus*, and some of them have been described under that genus.

### 1. **Anthaxia vitticollis.**

*Agrilus vitticollis*, Gory, Mon. iv. p. 215, t. 35. fig. 205 [1].

*Hab.* MEXICO, Cordova (*Sallé*), Oaxaca (*Höge*); SOUTH AMERICA, Monte Video [1].

### 2. **Anthaxia flavimana.**

*Anthaxia flavimana*, Gory, Mon. iv. p. 291, t. 49. fig. 285 [1]; Leconte, Trans. Am. Phil. Soc. xi. p. 219 (1860) [2].

*Anthaxia gracilis*, Melsh. Proc. Ac. Phil. ii. p. 148.

*Hab.* NORTH AMERICA [1], Southern States [2].—MEXICO, Northern Sonora (*Morrison*); PANAMA, David (*Champion*).

### 3. **Anthaxia fasciata.**

*A. vitticolli* sat similis, supra opaca, subtus viridis vel cyanea, nitida; capite antice leviter concavo, viridi, confertim rugoso; thorace reticulato, viridi, disco nigro-fusco, linea mediana viridi sæpe postice abbreviata; elytris subtiliter rugosis, striatis, obscure purpurascentibus, fascia paullo ante medium obscure rufa ornatis, sutura basi et ad apicem viridi.

Long. $2\frac{1}{2}$ lin.

*Hab.* Mexico, Presidio (*Forrer*), Acapulco in Guerrero (*Höge*).

This species resembles *A. vitticollis*, but is relatively a little shorter. The head is less impressed in front. The thorax is rather more convex, lightly impressed near the hind angles, with a fovea in front of the scutellum, which is green. The elytra are less narrowed at the apex. In some specimens the green colour in the middle and at the sides of the thorax is very obscure or absent, as is also the red fascia of the elytra.

## POLYCESTA (p. 18).

I have now before me five specimens of this genus, belonging to four or five species, but without making a study of the genus and an examination of original types, it is impossible to name them satisfactorily. The following was overlooked in the earlier part of this work.

### 3. **Polycesta cribrana.**

*Polycesta cribrana,* Mann. Bull. Mosc. 1859, iii. p. 182[1].

*Hab.* Mexico [1].

Only known to me from description.

## ACHERUSIA. (To precede the genus *Thrincopyge* *, p. 19.)

*Acherusia,* Lap. & Gory, Mon. i. p. 1 (1836).

Three species of this genus have been described, all from Brazil.

### 1. **Acherusia piliventris.**

*Acherusia piliventris,* Saund. Trans. Ent. Soc. Lond. 1869, p. 8, t. 1. fig. 7[1].

*Hab.* Mexico, Temax in Northern Yucatan (*Gaumer*).—Brazil [1].

The Mexican specimen differs from the type in being larger ($5\frac{1}{3}$ lines long), and in having the elytra darker with scarcely any trace of the coppery-red colour on the shoulders.

## ACMÆODERA (p. 20).

**Acmæodera cuprina** (p. 20).

To the Mexican localities given, add :—Tacambaro in Michoacan (*Höge*), Amula in Guerrero 6000 feet (*H. H. Smith*).

* This name was accidentally misprinted *Trincopyge*, on p. 19.

A single example from Pinos Altos in Chihuahua (*Buchan-Hepburn*) differs from the ordinary type of this species in being of a golden-green colour.

### 2 (A). **Acmæodera amplicollis.**

*Acmæodera amplicollis*, Leconte, Proc. Ac. Phil. 1866, p. 383[1]; Horn, Trans. Am. Ent. Soc. vii. p. 6.

*Hab.* NORTH AMERICA, Arizona[1]. — MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

The three examples received from Chihuahua may be referable to this species, but they are $6\frac{1}{4}$ lines long (which is rather larger than the size given by Dr. Horn) and they have the elytra dull green instead of blue.

### **Acmæodera flavomarginata** (p. 21).

To the localities given, add :—MEXICO, Villa Lerdo in Durango, Guadalajara and Zapotlan in Jalisco, Tula in Hidalgo, Jalapa in Vera Cruz (*Höge*), Temax in North Yucatan (*Gaumer*); GUATEMALA, Escuintla (*Conradt*).

The specimens from Villa Lerdo are broader than is usual, with two transverse bands at the apex of the elytra; one example, however, has these bands quite irregularly broken.

The examples from Jalapa are of the ordinary form, with a single broad band at the apex of the elytra; some examples, however, have this band partially divided into two by a black spot at the suture and another at the side.

The specimens from Zapotlan are of the usual form, but have the fourth interstice of the elytra more distinctly costate; the apical bands are a little irregular, distinct from each other, and there is a very small yellow spot close to the apex; one example has a transverse yellow band emitted from the apex of the lateral yellow stripe.

The examples from Tula (and one from Escuintla) have the fourth interstice of the elytra costate, but the apical bands are more or less approximate or united at the middle of each elytron, as is commonly the case; two of the examples have an extra yellow spot at the apex.

### 7 (A). **Acmæodera proxima.**

*A. flavomarginatæ* simillima; nigra, elytris usque ad medium flavo-marginatis, ante apicem fascia lata sanguinea ornatis, fascia sæpe maculis tribus nigris interrupta.

Long. 5–6 lin.

*Hab.* MEXICO, Acapulco in Guerrero (*Höge*, *H. H. Smith*), Rincon in Guerrero 2800 feet (*H. H. Smith*).

This only differs from the ordinary form of *A. flavomarginata* in having the elytra a

little longer and more gradually acuminate, and in having no yellow margin to the thorax.

### **Acmæodera flavosparsa** (p. 22).

To the locality Mexico, add :—Amula in Guerrero 6000 feet (*H. H. Smith*).

### **Acmæodera rubronotata** (p. 22).

To the Mexican localities given, add :—Pinos Altos in Chihuahua (*Buchan-Hepburn*), Tacambaro and Huetamo in Michoacan, Matamoros Izucar and Atlixco in Puebla, Mexico city (*Höge*), Tepetlapa 3000 feet, Acaguizotla 3500 feet, Chilpancingo 4600 feet, and Venta de Zopilote 2500 feet, in Guerrero (*H. H. Smith*).

### **Acmæodera impluviata** (p. 22).

To the Mexican localities given, add :—Ventanas 2000 feet (*Forrer*), Acapulco, Venta de Peregrino, Dos Arroyos 1000 feet, R. Papagaio 1200 feet, in Guerrero (*H. H. Smith*).

### 10 (A). **Acmæodera trifasciata.**

Nigra, nitida, pubescens ; thorace creberrime punctato ; elytris fortiter striato-punctatis, fasciis tribus sanguineis ornatis.

Long. $4\frac{1}{2}$–6 lin.

*Hab.* MEXICO, Acapulco (*Höge, H. H. Smith*), Dos Arroyos 1000 feet (*H. H. Smith*).

The head is densely punctured. The thorax is not broader than the base of the elytra, broadest at the posterior angles, arcuately narrowed anteriorly ; strongly punctured on the disc, which is rather deeply triangularly impressed, rugose at the sides, with an impression at the base at a short distance from the anterior angles. The elytra are long, gradually narrowed posteriorly, a little more rapidly beyond the third red band ; strongly punctured in lines, the interstices scarcely convex (except near the apex), and almost impunctate. The first red band is at the base, extending from one humeral callus to the other ; the second is at the middle, and ascends a little at the suture ; the third is halfway between the middle one and the apex, rectilinear.

### **Acmæodera scalaris** (p. 23).

To the Mexican localities given, add :—Saltillo in Coahuila (*Höge*), Monclova in Coahuila (*Dr. Palmer*), Monterey in Nuevo Leon, Villa Lerdo in Durango, Tula in Hidalgo, Huetamo in Michoacan, Matamoros Izucar in Puebla (*Höge*), Amula 6000 feet, Acaguizotla 3500 feet, Chilpancingo 4600 feet, Venta de Zopilote 2800 feet, and Hacienda de la Imagen 4000 feet, in Guerrero (*H. H. Smith*).

The markings in this species are fairly constant, but in the series from Guerrero the

black prevails to a much greater extent than in the specimens from the more northern localities. The yellow at the sides of the thorax varies considerably in specimens from the same locality.

In the specimens from Villa Lerdo the yellow prevails, except in one example in which the yellow is reduced to a minimum; the sutural stripe of the elytra is represented by a short streak near the scutellum; the lateral stripe is narrow, and leaving the margin posteriorly joins a transverse spot on the disc; the apical half of the elytra is black, with three or four yellow marginal spots, and one near the suture behind the spot on the disc.

A series from Acapulco, and single specimens from Venta de Peregrino and Dos Arroyos in Guerrero, and one from Saltillo in Coahuila, have no yellow at the sides of the thorax; but the yellow greatly prevails on the elytra.

It should be noted that none of the Mexican specimens of this species have the stripes on the elytra notched as figured by Dr. Horn (Trans. Am. Ent. Soc. vii. t. 1. fig. 20) under the name of *A. mima*.

Dr. Horn (*l. c.* p. 26) gives *A. semivittata*, Lec., as a synonym of *A. mima*, Gory. The insect figured and described by him is the one known to me as *A. semivittata*, which, judging from Gory's figure and decription, is quite different from *A. mima*. I do not know on what authority they are united.

**Acmæodera picta** (p. 24).

To the Mexican locality given, add:—Monclova in Coahuila (*Dr. Palmer*), Villa Lerdo in Durango (*Höge*).

16. **Acmæodera flavopicta.**

*Acmæodera flavosticta*, huj. op. p. 24 (nec Horn).

To the locality Mexico, add:—Paso del Norte in Chihuahua, Villa Lerdo in Durango, Tula in Hidalgo (*Höge*).

I am somewhat in doubt whether the specimens from Paso del Norte and Villa Lerdo should be referred to the same species; the markings on the elytra are very similar, but the spots are a little larger; these examples seem to form a passage to *A. delectabilis*.

16 (A). **Acmæodera delectabilis.** (Tab. IX. figg. 14, 14 *a*.)

Sat lata, ænea, nitida, pubescens; capite crebre fortiter punctato, medio impresso; thorace lato, crebre fortiter punctato, ad latera crebrius punctato, antice oblique arcuatim angustato, disco postice impresso, basi utrinque fovea impressa, angulis posticis rotundatis, lateribus post medium macula flava ornatis; elytris basi quam thorax angustioribus, postice parum angustatis, ad apicem arcuatim attenuatis, dorsim depressiusculis, fortiter striato-punctatis, interstitiis parce subseriatim punctatis, viridibus cyaneo-marginatis vel totis cyaneis, fasciis irregularibus maculisque flavis ornatis; corpore subtus griseo-pubescente.

Long. $4\frac{1}{2}$–6 lin.

*Hab.* MEXICO, Villa Lerdo in Durango (*Höge*).

This is probably only a variety of *A. flavopicta*, in which the yellow greatly prevails on the elytra. The yellow spot at the sides of the thorax is very conspicuous, and in one example extends obliquely towards the disc.

One example, which may be another variety of this species, from Villa Lerdo, appears to have the thorax deformed, the posterior angles projecting and truncate. This has the sides of the thorax margined with yellow, but the yellow does not reach the front angles. The elytra are yellow with round blue-black spots. The prosternum is decidedly more strongly punctured (fig. 14 *a*).

### **Acmæodera setosa** (p. 26).

To the locality Mexico, add:—Matamoros Izucar in Puebla, Colima city, Acapulco (*Höge*), Amula 6000 feet, and Acaguizotla 3500 feet, in Guerrero (*H. H. Smith*), Temax in Northern Yucatan (*Gaumer*).

Some examples have the markings reduced to two small oblique spots on each elytron; two from Colima have only one spot.

### **Acmæodera exilis** (p. 27).

To the locality Mexico, add:—Teapa in Tabasco (*H. H. Smith*).

## ACTENODES (p. 28).

### **Actenodes chalybeitarsis** (p. 28).

To the Mexican localities given, add:—Villa Lerdo in Durango, Misantla and Jalapa in Vera Cruz, Acapulco and Chilpancingo in Guerrero, Tapachula in Chiapas (*Höge*).

### **Actenodes fulginea** (p. 29).

To the locality given, add:—PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 3000 feet (*Champion*).

### **Actenodes regularis** (p. 29).

A single example from Jalapa, $5\frac{1}{2}$ lines in length, differs from the one from Orizaba in having the lower band of the elytra turned down at the outer margin.

### **Actenodes hopfneri** (p. 30).

To the Mexican locality given, add:—Jalapa in Vera Cruz (*Höge*).

### 6 (A). **Actenodes metallica.**

Elongata, angusta, ænea, subnitida; thorace olivaceo-æneo, subtiliter crebre punctulato, transversim late impresso; elytris thorace lateribus post medium acuminatis, acute serratis, nigrescenti-olivaceis, sub-

tiliter punctulatis, ad apicem paullo asperatis, margine basali vittaque apicali aureo-viridibus, ad medium fascia lata nigro-purpurea, antice et postice aureo-viridi et rufo-cupreo marginata, ornatis.
Long. $5\frac{1}{2}$ lin.

*Hab.* GUATEMALA, Panzos in Vera Paz (*Conradt*).

This species closely resembles *A. hopfneri* (Gory), but the general colour is of a less brown tint. The head has a deep longitudinal median channel, which (as well as a line bordering the eye) is green; the raised parts are not much punctured. The thorax is much more finely punctured, and the transverse impression is more marked. The elytra have the fascia not quite so broad, the upper border of the fascia ascends much less at the suture, and the posterior border does not descend at the suture; the upper border in the specimen described is interrupted near the suture; the suture is green at the base as far as the fascia, and also for a short distance behind the fascia; the punctuation is much finer than in *A. hopfneri*, but the surface is slightly rough at the apical margins. The prosternum is green, with a transverse coppery line anteriorly, very closely, evenly, and moderately strongly punctured; the process which enters the mesosternum is very narrow. The middle of the sterna and basal segment of the abdomen is green.

**Actenodes calcarata** (p. 31).

To the localities given, add:—MEXICO, Jalapa and Misantla in Vera Cruz, Cuernavaca in Morelos (*Höge*); GUATEMALA, Yzabal (*Champion*).

**Actenodes undulata** (p. 31).

To the localities given, add:—MEXICO, Temax in Northern Yucatan (*Gaumer*).

**Actenodes humeralis** (p. 31).

Three examples apparently referable to this species; two of which, from Chilpancingo, have no humeral spot on the elytra, and the third, from Bugaba, has a reddish-coppery streak at the suture at the base, and a streak near the apex in the middle of the elytron.

COLOBOGASTER (p. 33).

**Colobogaster cyanitarsis** (p. 34).

A single specimen from Mochitlan in Guerrero (*Baron*) agrees with the one already recorded in having the posterior angles of the thorax diverging and truncated; but the sides of the thorax and elytra are shaded with green, and the tarsi are also green. I think, however, that the two specimens are certainly conspecific; but probably they should be separated from *cyanitarsis*.

They may belong to *C. infra-viridis*, Th. (p. 34). The following expressions are not

sufficiently definite to enable me to decide:—"Prothorax lateribus subhexagonus." "Corpus subtus tenuissime et sparsim punctatum." "Abdominis segmentum ultimum apice 3-spinosum." "Très-voisin du *C. cyanitarsis*, mais le contour latéral du prothorax est autre; il est *non* sinué au milieu et rétréci en arrière." "La punctuation en dessous est plus forte."

The apex of the abdomen is trispinose.

CHRYSOBOTHRIS (p. 35).

(A).* 1. **Chrysobothris delectabilis.** (Tab. IX. fig. 13.)

Viridis, supra cyanescenti-viridis; thorace antice parum angustato, convexo, subtiliter punctulato; elytris nigro-violaceis, tenuiter punctulatis, cyaneo-viridi-maculatis, pone medium fovea rotunda profunda impressis; abdomine cyaneo-maculato; tarsis cyaneis.

Long. $9\frac{1}{2}$ lin.

*Hab.* PANAMA, Chiriqui (*Trötsch*).

This species should be placed at the head of the genus, or it might with equal propriety be placed at the end of *Colobogaster*. It differs from all its allies in the comparatively elongate thorax. The head is closely and strongly punctured at the lower part of the face, less closely at the upper part. The thorax is convex, much narrower than the elytra, about one-third broader than long, not much narrowed in front, gently sinuate at the sides at the middle, slightly wider at the posterior angles, which descend perpendicularly on to the elytra; there is a very slight longitudinal median impression; the median basal lobe is narrow. The elytra are formed very much as in *Colobogaster chlorosticta*, but are rather more narrowed at the apex; the suture for one-third its length from the base is green; each elytron has a bluish-green band at the base and an oblique band before the middle, the latter extending from the margin to about the middle of the elytron, where it is dilated, the surface here being impressed and more strongly punctured; there is a small spot close to the suture at the apex of the sutural stripe; behind the middle, near the side, there is a deep round fovea, with a short transverse spot crossing it, and between this and the suture is another spot; the apical margin is also blue-green. The abdomen has the apical segment truncated, with the outer angles of the truncature dentiform, the middle part of the apical margin produced a trifle beyond the level of the outer angles.

**Chrysobothris capitata** (p. 36).

To the localities given, add:—MEXICO, Tabi in Yucatan (*F. D. G.*).

**Chrysobothris melazona** (p. 38).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, Cayo (*Blancaneaux*); GUATEMALA, Coban in Vera Paz (*Conradt*).

* The letter (A) &c. placed thus signifies that the species precedes No. 1.

### 23 (A). **Chrysobothris densa.**

Elongato-oblonga, depressiuscula, omnino brunneo-cuprea, parum nitida; clypeo late emarginato; thorace brevi, lato, angulis oblique truncatis, crebre sat fortiter punctato, disco nitido, parce punctulato, medio leviter sulcato, lateribus medio fere parallelis; elytris quam thorax quadruplo longioribus, parum latioribus, crebre fortiter punctatis, ad latera rugosis; costa suturali (basi abbreviata) bene elevata fere recta; costa secunda postice solum visa, tertia brevi irregulari ad medium solum distincta; marginibus serratis.

Long. $4\frac{1}{2}$ lin.

*Hab.* MEXICO, Ciudad in Durango (*Höge*).

This species evidently belongs to Dr. Horn's Group IV. (Tr. Am. Ent. Soc. xiii. p. 84), and is most nearly allied to *C. pusilla*, Lap. & Gory. The prosternum has the anterior margin slightly arcuately advanced; in the male it is closely and rather strongly punctured and pubescent, with a narrow smooth median line; in the female the punctures are less close, and the smooth part is much wider at the apex, the latter with only a few punctures and scarcely any pubescence. The head in the male is densely punctured, rather dull, with a smooth longitudinal line on the vertex; in the female it is more shining, much more coarsely but densely punctured; there are traces of two small smooth spots, more conspicuous in the female than in the male; the clypeus has the emargination rather wide and deep, slightly angular, with the lateral lobes straight in front. The anterior tibiæ are only slightly curved, enlarged at the apex for rather more than one-third their length. The abdomen has the last ventral segment semicircularly emarginate at the apex in the male, somewhat triangularly notched in the female. The elytra have the sutural costa almost parallel to the suture and not curved away from it at the apex; the second costa is somewhat irregular, commencing about the middle of the elytra, and makes more or less of a curve near the apex; the third costa is only indicated by a slight irregular ridge at about the middle; there is a transverse shallow impression on the disc before the middle, a smaller round one at the apex of the third costa, with some irregular smooth marks above and below it, and between the sutural costa and the second costa are two vague smooth spots (one above the other) not far from the apex.

### **Chrysobothris acutipennis** (p. 42).

To the localities given, add:—MEXICO, Ventanas in Durango (*Höge*), Temax in Northern Yucatan (*Gaumer*); GUATEMALA, Chacoj in Vera Paz (*Champion*).

### **Chrysobothris costifrons** (p. 45).

To the Mexican localities given, add:—Amula in Guerrero 6000 feet (*H. H. Smith*).

### 30 (A). **Chrysobothris æqualis.**

Sat elongata, ænea, nitida; capite crebre fortiter punctato, clypeo late leviter emarginato; thorace lato, sat convexo, lateribus rotundatis, crebre fortiter punctatis, disco minus crebre subtilius punctulato; elytris ad

apicem gradatim arcuatim attenuatis, haud crebre punctatis, tricostatis, costa suturali fere recta (basi abbreviata), costa secunda (basi longe abbreviata) medio curvata, tertia ad medium solum distincta.
Long. 4–6 lin.

*Hab.* MEXICO, Temax in Northern Yucatan (*Gaumer*).

This species belongs to the *C. multistigmosa* group, and is most nearly allied to *C. distincta*, Lap. & Gory, but is rather shorter, more brassy in colour, and has the sides of the thorax rounded. The head has two small smooth spots in front. The thorax is short and broad, and has the sides unusually rounded; the punctuation on the disc is fine, and the punctures are not very close together; there is a very slight trace of a median impression. The elytra, as compared with other species in this group, are rather short; they have the punctures very distinct and slightly separated from each other; there is a small brassy impression interrupting the basal part of the second costa, another (more transverse) at the apex of the third costa, and a third at some distance from the apex, between the first and second costæ; the first costa is rectilinear, a little more separated from the suture at the apex than at the middle; the second costa, which commences a little before the middle of the elytron, is curved at its middle to avoid the brassy spot; the third costa is short, turns down anteriorly a little below the shoulder, and terminates posteriorly in the impression. The prosternum in the male is closely punctured, with a smooth median line; in the female it is smooth, with a few punctures at the sides. The abdomen in the male has a shallow median channel for its whole length, the terminal segment serrate at the sides, with a rather wide but shallow trapezoidal excision at the apex; in the female there is a very small semicircular emargination at the apex, the angles of the emargination very acute. The anterior femora have the large triangular tooth denticulate on the outer edge. The anterior tibiæ are curved; enlarged at the apex in the male, simple in the female.

**Chrysobothris distincta** (p. 45).

To the Mexican localities given, add:—Venta de Zopilote and Amula in Guerrero (*H. H. Smith*).

**Chrysobothris multistigmosa** (p. 46).

To the Mexican localities given, add:—Acaguizotla in Guerrero 1500 feet (*H. H. Smith*), Temax in Northern Yucatan (*Gaumer*).

**Chrysobothris lateralis** (p. 47).

According to Dr. Horn this species is *C. debilis*, the type specimen of which does not show the red sides to the thorax. This is so conspicuous in all the examples I had seen that I could not credit Leconte omitting to notice it. The specimens received from Mr. Morrison with the name *C. debilis* are, according to Dr. Horn, *C. lixa*, Horn (Trans. Am. Ent. Soc. xiii. p. 101), a species occurring in Texas and Arizona.

## STENOGASTER (p. 48).

**Stenogaster costifer** (p. 48).

To the Mexican locality given, add:—Chilpancingo in Guerrero 4000 feet (*H. H. Smith*), Temax in Northern Yucatan (*Gaumer*).

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By some unfortunate accident a portion of my MS. referring to a third species of *Stenogaster* and to the genus *Trypanidius* was omitted from p. 49. The sentence at the bottom of p. 48, "This and the following species are unknown to me" refers to *Stenogaster fossulatus* and the following:—

### 3. Stenogaster morosus.

*Stenogaster morosus*, Chevr. Coll. Mex. Cent. ii. fasc. 6, no. 135[1].

*Hab.* Mexico, Orizaba[1].

This insect is stated to resemble *S. bitæniatus*, a species I have placed in the following genus:—

## TRYPANIDIUS. (To precede the genus *Cyphothorax*, p. 49.)

*Trypanidius*, C. O. Waterhouse, Trans. Ent. Soc. Lond. 1887, p. 179.

This name was proposed by me for *Stenogaster bitæniatus*, which differs from the typical *Stenogaster* in having the second, third, and fourth tarsal joints furnished with a lamina.

The two species are both apparently peculiar to our fauna.

### 1. Trypanidius bitæniatus.

*Stenogaster bitæniatus*, Chevr. Col. Mex. Cent. ii. fasc. 6, no. 136[1].

*Stenogaster pulverosus*, Gory, Mon. iv. p. 204, t. 34. fig. 195[2].

*Hab.* Mexico[1 2], Puebla, Orizaba, Cordova (*Sallé*), Cerro de Plumas (*Höge*); Guatemala, Panzos in Vera Paz (*Conradt*).

### 2. Trypanidius infrequens.

*Trypanidius infrequens*, C. O. Waterh. Trans. Ent. Soc. Lond. 1887, p. 179[1].

*Hab.* Mexico (*Brit. Mus.*[1]), Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

## PARADOMORPHUS (p. 51).

**Paradomorphus vermiculatus** (p. 51).

To the Mexican locality given, add:—Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

9 (A). **Paradomorphus carissimus.** (Tab. IX. fig. 16.)

Sat brevis, crassus, æneo-griseus, pubescens; capite leviter convexo, crebre evidenter punctato; thorace sat lato, crebre evidenter punctato, lateribus arcuatim rotundatis; elytris cyaneis, sat crebre tenuiter punctulatis, dimidio basali aureo-cuprea, rugosa, macula sat magna communi cyanea, fascia ante apicem et apice ipso griseo-pubescentibus; corpore subtus dense albo-pubescente.

Long. $3\frac{1}{4}$ lin.

*Hab.* MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

This very handsome species is allied to *P. biplagiatus*, but is a much broader insect. The head has a slight impression above the clypeus. The thorax is without impressions, sparsely clothed with short grey pubescence, rather strongly punctured, the punctures often touching each other in a transverse or oblique direction, the sides slightly rugose; the anterior part is gently convex, the base lightly impressed. The elytra have no costa. The prosternal chin-piece is gently emarginate. The abdomen has the lateral carina of the basal segment nearly rectilinear posteriorly. The basal joint of the posterior tarsi is very short.

13. **Paradomorphus gibbifrons.** (Tab. IX. figg. 20, 20 *a*.)

Obscure cupreus, parum nitidus; capite longitudinaliter sulcato, fronte bigibbosa; thorace medio et ad latera impresso, impressionibus sordide aureo-pubescentibus, lateribus leviter arcuatis; elytris obscure purpureo-cupreis, rugosis, ante medium macula communi quadrata postice rama transversa juncta, fasciaque ante apicem sordide aureis ornatis.

Long. $2\frac{1}{2}$ lin.

*Hab.* MEXICO, Mescala in Guerrero (*H. H. Smith*).

This species has the form of *Agrilus pullulus* (Tab. VI. fig. 10), but the forehead is more prominent than in that insect. The head is shining, obliquely striolate in front, strongly punctured on the forehead, which is prominent and biconvex. The thorax is shining, moderately closely punctured, with slightly raised oblique lines near the front angles; the disc is longitudinally impressed, and the impression diverging in front and at the base forms a letter **X**; the posterior ridge is well marked, short, nearly straight, not quite reaching the base. The elytra are darker than the rest of the insect, with the sutural area tinted with dark blue, and the subcosta fairly well marked; the dull golden pubescence forms an oblong quadrangular spot just before the middle (leaving a round bare spot in the centre), emitting an oblique band posteriorly to the margin; there is also a band before the apex. The prosternal chin-piece is very widely but very slightly emarginate. The prosternum is finely margined, finely and moderately closely punctured, arcuately acuminate posteriorly. The abdomen has the lateral carina deeply sinuate about the middle, with a golden spot on the upper margin (fig. 20 *a*).

AGRILUS (p. 57).

I regret that in numbering the species in my manuscript I accidentally omitted to number *A. sublateralis*, and the printer numbered it 61 instead of 60 (A), and altered

the whole of the subsequent numbers after page 59 was printed. The following alterations in my table of the species is now rendered necessary:—For nos. 46–89 read 46–90, for 90–91 read 91–92, and in all cases read one number higher to 141.

1 (A). **Agrilus pilosus.** (Tab. IX. fig. 17.)

Cupreo-æneus, parum nitidus, confertim punctatus, flavo-griseo-pilosus; capite ruguloso, antice impresso; thorace subquadrato, transversim ruguloso, disco antice paullo gibboso medio impresso, basi medio bi-impressa, lateribus leviter arcuatis; elytris postice paullo declivis, haud costatis, pube flavo-grisea ornatis, ad apicem sat acuminatis, apice ipso cupreo serrulato.

Long. $4\frac{1}{2}$ lin.

*Hab.* MEXICO, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

This is a dull, closely sculptured species, clothed above and below with short sandy pubescence, which forms spots and bands on the elytra. The head is impressed in front, with a very slight swelling above each antennal socket, the vertex with close, oblique, punctured grooves. The thorax is a little broader than long, scarcely more narrowed in front than at the base, punctured, and closely obliquely rugulose; the disc is raised anteriorly (the middle of the anterior margin arched forwards), with an oval impression on the highest part. The elytra at the base are as broad as the thorax, slightly narrower below the shoulders, again broader behind the middle, and then narrowed to the apex; slightly flattened on the disc; densely rugose; the pubescence forms the following markings:—a patch at the scutellum, two small spots at one-third from the base, a fascia at the middle, a broader fascia at a short distance from the apex, and two small spots just before the apex. The prosternal chin-piece is short and very distinctly emarginate. The prosternum is closely rugose, lightly impressed in the middle. The metathoracic episterna are closely punctured. The abdomen has the pubescence somewhat congested at the sides, forming vague spots; the apical margins of the segments are smooth, and there is a smooth spot at the side of the apical segments; the lateral carina of the basal segment is slightly angularly bent at the middle.

**Agrilus oculatus** (p. 60).

To the Mexican locality given, add:—Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

**Agrilus distans** (p. 64).

To the Mexican locality given, add:—Amula in Guerrero 6000 feet (*H. H. Smith*).

The specimen from Amula, probably a male, is altogether a little narrower than the type. It has the spots on the elytra (especially the posterior one) more elongate. The abdomen has a conspicuous pale yellow spot at the side on the upper margin of the basal segment, and the lateral carina here is more deeply sinuate than in the type.

**Agrilus nodifrons** (p. 68).

To the Mexican locality given, add:—Dos Arroyos in Guerrero 1000 feet (*H. H. Smith*).

28 (A). **Agrilus cavifrons.** (Tab. IX. fig. 18.)

Sat latus, depressiusculus, cupreo-æneus; capite antice excavato, inæquali, sericeo-pubescente; thorace transverso, antice paullo angustato, crebre fortiter punctato, disco excavato ruguloso, lateribus albo-tomentosis, ad angulos posticos carina brevi distincta introrsum directa; elytris fuscis, crebre punctatis, basi thorace paullo latioribus, sub humeris sinuatis, ante apicem angustatis, ad apicem paullo dilatatis, cupreis, denticulatis, singulis costa lævi nitida instructis.

Long. $8\frac{1}{2}$ lin.

*Hab.* MEXICO, Venta de Zopilote in Guerrero (*H. H. Smith*).

This very fine species is quite unlike any other in our fauna; it is perhaps most nearly allied to *A. caudalis*, Lap. & Gory. The head has the whole of the front concave. The thorax has the deep discoidal impression broad posteriorly, obliquely narrowed in front, the raised margins of the impression shining and less closely punctured. The elytra are rather flat, nearly horizontal; there is some whitish pubescence in the basal region, congested into a white spot in the basal impression; there are some indefinite spots about the middle; at one-third from the apex a distinct band of pale sandy pubescence, slightly descending at the suture, and just before the apex there is a well-marked oblique spot between the suture and the costa; each elytron has a well-marked costa, which curves very gradually towards the suture till near the apex, and then turns again outwards; between the costa and the margin there is a somewhat indistinct interrupted raised line. The prosternal chin-piece is large, arched in front. The prosternum is strongly and moderately closely punctured, with the margins smooth, but not raised. The metathoracic episterna are closely and finely punctured in transverse lines. The abdomen is finely and not very closely punctured in the middle (smooth in parts), closely rugulose at the sides of the basal segment; the lateral carina of the basal segment is interrupted by a notch behind the middle; the terminal segment has a well-marked keel in the middle at the apex, with an impression on each side of it; the extreme apex beyond the impressed line is asperate.

68 (A). **Agrilus oblitus.** (Tab. IX. figg. 19, 19 *a*.)

Cupreo-fuscus, vix nitidus; capite antice impresso croceo-pubescente, longitudinaliter canaliculato; thorace basi paullo angustato, transversim ruguloso, punctato, disco vix bi-impresso, lateribus croceo-pubescentibus; elytris confertim asperulatis, ad suturam leviter impressis, ad apicem paullo angustatis, singulis apice dente vix acuto instructis; pectore abdomineque croceo-marginatis; femoribus posterioribus paullo incrassatis.

Long. $3\frac{1}{4}$ lin.

*Hab.* NICARAGUA, Chontales (*Belt*).

A somewhat dull, rough species, with conspicuous yellow margins to the thorax and

upper border of the abdomen. The head has the face clothed with yellow pubescence, leaving two bare spots above the clypeus. The thorax has a very slight impression on the front of the disc, and another at the base; the posterior ridge is distinct but short, close to the margin, slightly curved outwards anteriorly. The elytra are a little narrowed before the middle, wider again behind the middle, and then gradually narrowed to the apex; the apex of each is furnished with a distinct, but not very acute, tooth near the sutural angle. The prosternal chin-piece is arcuately rounded in front. The prosternum is finely rugose and pubescent, a little widened behind the coxæ. The metathoracic episterna are finely rugose, the upper half clothed with yellow pubescence. The abdomen has an oblique stripe of sandy pubescence on each side of the basal segment, and there is a spot on each of the following segments slightly removed from the sides; the lateral carina of the basal segment is uninterrupted, slightly arcuate, almost rectilinear posteriorly (fig. 19 *a*).

### 68 (B). **Agrilus strigifer.**

Elongatus, parallelus, subtus æneus; capite antice æneo, subtiliter punctulato; thorace æneo-fusco, basi paullo angustata, lateribus macula alba ornatis; elytris sordide cupreo-purpureis, rugosis, maculis sex et strigis quatuor albis ornatis; femoribus sat incrassatis, tarsis longis.

Long. 3 lin.

*Hab.* MEXICO, Tepetlapa in Guerrero 3000 feet (*H. H. Smith*).

This species somewhat resembles and is allied to *A. femoralis* (Tab. V. fig. 22), but is shorter, and has the elytra less gradually narrowed to the apex. The head is lightly impressed in front, finely punctured, dark purple-brown on the vertex, brassy in front, with a longitudinal impressed line, and a slight impression above the clypeus, in which is some whitish pubescence; the face is not much narrowed at the lower part; the forehead viewed from above is slightly in advance of the eyes, lightly impressed in the middle; the head in the only specimen before me is protruding from the thorax as in the type of *A. femoralis* (this may be a natural character, but I did not consider it so in *A. femoralis*, and it is not so represented in the figure). The antennæ are moderately long, but not so long as in *A. femoralis*. The thorax is not quite so long as in *A. femoralis*, finely reticulate and punctured, very slightly narrowed in front, distinctly narrowed at the base; the disc has a very slight impression in front, and is obliquely impressed on each side behind the middle; the posterior ridge is obsolete. The elytra are a little narrowed at their middle, of an obscure brownish-purple, closely asperate, with the subcosta only slightly indicated; each elytron has a small round dirty white spot at the base, then a short streak which almost joins a second spot at the middle (close to the suture), and a third spot at one-third from the apex, joining a streak which is continued to the apex. The prosternal chin-piece is slightly emarginate in the middle. The prosternum is rugose, with the margins raised, obliquely acuminate at the apex. The metathoracic episterna are closely punctured, with a white spot

above; there is also a white spot on the mesothoracic epimera and another on the posterior coxæ. The abdomen has a spot of white scales under the femora, a transverse spot in an impression on the basal segment, and a smaller one at the base of the second segment; the lateral carina is strongly sinuate about the middle, with a white spot in the sinuosity. The posterior femora are much thickened, the tarsi long, with a very long basal joint.

### 72 (A). **Agrilus latifrons.**

Elongatus, postice gradatim angustatus, æneus; capite lato, excavato, oculis prominentibus; thorace quadrato, transversim ruguloso, medio bi-impresso fere sulcato, lateribus vix arcuatis fere rectis, ante basin perpaullo sinuatis, antice macula alba ornatis, angulis posticis prominulis; elytris longis, confertim rugosis, ad suturam impressis; corpore subtus albo-maculato; tarsis posterioribus longissimis.

Long. $2\frac{4}{5}$–$3\frac{1}{4}$ lin.

*Hab.* Mexico, Tepetlapa, Chilpancingo and Acapulco in Guerrero (*H. H. Smith*).

*Var.* Thorace medio sulcato, elytris obscure cupreis.

This species much resembles *A. cephalotes* (Tab. V. fig. 23), but is differently sculptured, and has the basal joint of the posterior tarsi very long, in which respect it resembles *A. laticeps*. The head is very wide; viewed from above it is widely angularly impressed, in front it is widely but not deeply concave, obliquely punctate-striolate. The thorax is transversely and obliquely punctate-striolate and rugulose; the disc has two subconfluent shallow impressions, the anterior one being the smaller (in the specimen from Acapulco these are deeper and confluent); the posterior ridge is only distinct when viewed laterally, it is curved outwards and downwards in front; the lateral oblique impression is deep, and is filled with white pubescence anteriorly. The elytra are long, rather flat, closely rugose, a little narrowed before the middle, gradually narrowed at the apex, but not very acuminate; the shoulders are much raised; the subcosta is slightly marked, rectilinear, but does not reach the apex. The specimen from Chilpancingo has the elytra a little darker than in the one from Tepetlapa, and in the one from Acapulco they are obscure coppery. The prosternal chin-piece is short, gently emarginate. The prosternum is rather rough, finely margined at the sides, nearly parallel, truncate posteriorly, with a narrow process at a lower level. The sides of the sterna are clothed with whitish scales. The abdomen has an oblique broad stripe on the basal segment, and a triangular spot on the second and third segments; the lateral carina of the basal segment is distinctly sinuate behind the middle, with a white spot in the sinuosity. The posterior tarsi are very long.

### 105 (A). **Agrilus delicatulus.**

Elongatus, parallelus, æneus, virescens; capite sat magno, oblique punctato-striolato, medio leviter sulcato, fronte biconvexa; thorace convexo, oblique punctato-striolato, medio sulcato; elytris longis, asperatis, pube grisea brevissime sparsis, dorso depresso.

Long. $1\frac{3}{4}$–$2\frac{1}{4}$ lin.

*Hab.* Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

The colour varies somewhat, being either brassy, golden-green, or tinted with coppery: one example has the elytra pale steel-blue. The head is rather large, and has the eyes prominent. The antennæ are moderately long. The thorax appears a little longer than broad, some examples have the sides nearly straight, in others they are gently sinuate before the base; the surface is closely marked with oblique punctured lines; the median channel is deep, and extends from the base to the apex; the anterior margin is slightly advanced, and raised in the middle; there is no posterior ridge. The elytra are a little narrowed before the middle, and then slightly wider again, then gradually narrowed towards the apex, which is obtuse; the surface is evenly asperate, without impressions, dotted with very short pale pubescence; there is no subcosta; the suture is raised and is black, and the surface on each side of it is darker than the rest of the surface. The prosternal chin-piece is emarginate. The prosternum is coarsely punctured, acuminate posteriorly, beset with long testaceous hairs. The abdomen has the lateral carina nearly rectilinear posteriorly. The basal joint of the posterior tarsi is long.

### 112 (A). **Agrilus opacipennis.**

Elongatus, subdepressus, niger, opacus; antennis latis, pubescentibus; capite antice impresso; thorace transversim quadrato, punctato-striolato, ruguloso, disco cyanescente, convexo, utrinque oblique impresso, lateribus late pube rufo-flava marginatis; elytris planatis, confertim subtiliter granulosis, brevissime pubescentibus, subparallelis, ad apicem arcuatim attenuatis; abdomine segmento secundo macula pallide flava ornato.
Long. 3–3¼ lin.

*Hab.* Mexico, Chilpancingo in Guerrero 4000 feet (*H. H. Smith*).

The head in two of the examples is obscure dark green, and in the other it is more purple; closely punctate-striolate above, rugose at the lower part of the face, one example having a pale yellow pubescent spot. The antennæ are very broad and hairy. The thorax has the disc dark blackish-blue, tinted with coppery-purple towards the sides; it is convex in front, obliquely impressed on each side behind; the sides are clothed with orange-pink pubescence, changing into yellow at the anterior angles.

This species is close to *A. auritus*, Chevr., but is shorter, and has the front part of the disc of the thorax raised; in this last respect it also differs from *A. gemmatus*, Say.

## EXÆSTHETUS. (To precede the genus *Taphrocerus*, p. 127.)

Antennal sockets small, not very approximate. The antennæ a little longer than the head and thorax together, hairy; the first and second joints moderately large, the following ones slender, elongate (Tab. IX. fig. 15 *a*). Thorax convex, transversely impressed at the base, finely margined at the sides, the anterior angles deflexed and not visible from above. Scutellum elongate, arcuately acuminate (fig. 15 *b*). Elytra as broad as the base of the thorax, subparallel, arcuately narrowed at the apex, without costæ. Prosternum without chin-piece; the intercoxal process subquadrate, obtusely rounded at the apex, almost truncate, and met posteriorly by a slight projection of the metasternum. Metathoracic episterna moderately wide, subparallel. Posterior coxæ of nearly equal width throughout (fig. 15 *c*). Abdomen with the first and

second segments united into one; the intercoxal process acuminate. Legs rather slender; the tibiæ straight; the tarsi moderately long, the second and third joints with a very small lamina, which is scarcely distinguishable when dry, the fourth joint with a rather large delicate lamina; the claws dilated at their basal half (figg. 15 *d*, *e*).

I think this very aberrant Buprestid may be placed next to *Mastogenius*. Its general appearance is suggestive of *Haplocnemus* in the Dasytidæ.

1. **Exæsthetus dasytoides.** (Tab. IX. figg. 15, 15 *a–e*.)

Elongatus, paullo convexus, nitidus, subtus fere niger, supra nigrescenti-æneus; capite leviter convexo, sat crebre subtiliter punctato; thorace antice angustato, convexo, sat crebre evidenter punctato, lateribus sat rotundatis; elytris sat crebre fortiter punctatis.

Long. 2 lin.

*Hab.* Mexico, Jalapa (*Höge*).

The head has an impression in the middle of the lower part of the face. The thorax is impressed at the base, convex on the disc; the punctures are very distinct, rather close together. The elytra have the punctures rather strong and moderately close together.

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## Fam. THROSCIDÆ*.

This family is composed of a small number of genera and species, not very closely related among themselves, occupying a position in the coleopterous series intermediate between the Buprestidæ and Eucnemidæ, and no definition has yet been given which will, with certainty, separate the Throscidæ, as at present constituted, from those between which it is placed. As the family is generally admitted, and as there is accord as to its constituent genera, these will be discussed in their relation to each other.

The genera divide into three series:—

| | |
|---|---|
| Antennæ strongly serrate or subpectinate from the fourth to the tenth joints . . . . . | Lissomus, Hypochætes, Drapetes. |
| Antennæ terminated by a loose three-jointed club . | Throscus, Aulonothroscus. |
| Antennæ fusiform . . . . . | Pactopus. |

Before entering further on this subject, it may be well to state that *Lissomus* has been placed at the head of the series as the more nearly related to the Buprestidæ as *Throscus* and *Aulonothroscus* are evidently to the Eucnemidæ.

The details of these genera have been given at such length that but little is required at present beyond an examination of the metasternum.

In *Lissomus* there will be observed beginning at the inner side of the middle coxal cavity a finely elevated line which curves slightly backward and outward, and gradually disappears. In *L. flavipennis* this line makes almost a semicircular curve.

*Hypochætes* has a short postcoxal line as in *Lissomus*. From an examination of a

* By G. H. Horn.



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specimen kindly loaned me by M. Ed. Fleutiaux there does not seem to be any reason for separating the species from *Lissomus*.

This line in *Drapetes* begins at the same place, curves slightly outward, then backward towards the posterior angle of the metasternum, and gradually disappears.

In *Throscus*, as here restricted, there is a slight depression beginning at the middle coxæ, curving a little towards the middle of the side of the metasternum, in some species limited behind by a slightly elevated line.

*Aulonothroscus* has a sharply defined and rather deep groove for the reception of the middle tarsi, which follows the direction of the elevated line in *Drapetes*.

*Pactopus* has, in addition to the metasternal sulcus, a groove for the posterior tarsi impressed on the first three ventral segments.

These points serve as an illustration of the often observed fact, that what appears as a line of ornament in one genus, may be the intimation of a well-defined structure in an allied genus.

The distribution of the Throscidæ presents but little of interest. *Lissomus*, with but two exceptions, is restricted to Central and Tropical South America. *Drapetes* with more numerous species in the central and tropical regions, has only four in Boreal America, and but four outside of the American continent. Of *Throscus* it is not so easy to speak. Europe and Boreal America have about seven each, Central America two. *Aulonothroscus* has six in Boreal and two in Central America, and several in Brazil. From the fact that it has been necessary to divide *Throscus* among the species known to de Bonvouloir, it is possible that the new genus may have representatives in the Old-World fauna.

## LISSOMUS.

*Lissomus*, Dalman, Ephem. Ent. p. 13 (1824); de Bonvouloir, Mon. des Throscides, p. 97.
*Lissodes*, Latreille, Fam. Nat. p. 248 (pars).

The species of this genus are the largest of the family, and seem by their entire organization to approach more nearly the preceding family, Buprestidæ, as a whole, than any of the genera which follow. Nearly all the species are more or less gibbous towards the base of the elytra, with a resultant form which distinguishes them at a glance, apart from size, from *Drapetes*.

With the exception of one species from the Gaboon, all at present described are from the Central-American region and Tropical South America.

### 1. Lissomus gagatinus.

*Lissomus gagatinus*, de Bonv. Mon. p. 110[1].

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia, Cartagena[1].

*L. gagatinus* is the largest black species in our fauna. Specimens were labelled *L. punctulatus* is the Sallé collection.

### 2. Lissomus impressifrons.

*Lissomus impressifrons,* de Bonv. Mon. p. 115 [1].

*Hab.* Mexico [1], Cordova, Playa Vicente (*Sallé*); Guatemala, Sabo and San Juan in Vera Paz (*Champion*).

### 3. Lissomus punctulatus.

*Lissomus punctulatus,* Dalm. Ephem. Ent. p. 14 [1]; de Bonv. Mon. p. 112 [2].
*Lissomus cribratus,* Eschsch. in Thon's Ent. Archiv, ii. 1, p. 31 [3].
*Lissomus Lacordairei,* Gerst. Linn. Ent. 1860, p. 143 [4].

*Hab.* Guatemala, Yzabal (*Sallé*), San Isidro (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—Colombia [2]; Brazil [1 2 3 4].

### 4. Lissomus foveolatus.

*Lissomus foveolatus,* Dalm. Ephem. Ent. p. 14 [1]; de Bonv. Mon. p. 117, t. 4. fig. 2 [2].
*Lissomus ebeninus,* Blanch. Voy. d'Orb., Col. p. 145 [3].
*Lissomus punctulatus,* Gerst. Linn. Ent. 1860, p. 146 [4].

*Hab.* Mexico [2]; Guatemala, El Tumbador, El Reposo, Las Mercedes, San Isidro, Zapote, San Juan in Vera Paz, Teleman (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Bolivia [3 4]; Brazil [1 2].

*L. foveolatus* and *L. punctulatus* have apparently caused much trouble in their identification, and this is only possible after an examination of a good series, more by an exercise of judgment than by any well-defined differences.

In the present species the antennæ and tarsi are conspicuously pale, in *L. punctulatus* they are rather ferruginous or pale brown; in *L. foveolatus* the specimens are never three times as long as wide, while in *L. punctulatus* the length is in that proportion.

As usual in black species there is a tendency in the elytra to become castaneous, inclining more or less to red. When this occurs in *L. foveolatus* the colour is limited to a broad band including the suture, leaving the sides of the elytra black.

### 5. Lissomus ustulatus.

*Lissomus ustulatus,* de Bonv. Ann. Soc. Ent. Fr. 1860, p. 362, t. 8. fig. 8 [1].

*Hab.* Guatemala, Senahu, San Juan, Teleman, and Panima, all in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).—Colombia [1].

This species has often the greater part of the elytra red, the sides, base, and apex

black; but the extent of the red colour is variable, and may disappear entirely, so that the elytra become entirely black. The abdomen is, however, always red, and by this the species may be known from *L. punctulatus*, small specimens of which it resembles.

### 6. **Lissomus trapezoideus.** (Tab. X. fig. 7.)

Oblong, the elytra distinctly gibbous, piceous-black, shining; antennæ black: head very sparsely punctate, impressed between the eyes; thorax more than one-third wider at the base than long, trapezoidal, gradually narrowed at the apex, sides more or less sinuous, apex moderately deeply emarginate, slightly sinuate, front angles moderately prolonged, disc sparsely punctate; elytra nearly parallel in their basal half, thence narrowed to the apex, the surface quite regularly striate-punctate, the punctures rather finer than those at the base of the thorax, the submarginal groove deep, but interrupted near the base; body beneath shining black, the abdomen rather finely, not closely, punctate, sparsely pubescent; legs and tarsi piceous.

Length 7–11 millim.

*Hab.* GUATEMALA, Capetillo (*Champion*).

Similar to *L. punctulatus* in form, but differs from all the species at present known by the thorax being narrowed at the front by the gradual convergence of the sides without being at all arcuate near the apex. The very black antennæ and piceous tarsi will assist in the separation of this from any of the black species. Fifteen examples seen.

### 7. **Lissomus pilarius.** (Tab. X. fig. 6.)

Oblong, moderately elongate, piceous-black, shining, the thorax orange-red with black apical border; antennæ piceous: head black, coarsely, moderately closely punctate, the front slightly flattened; thorax more than one half wider at the base than long, sides straight and obliquely divergent posteriorly, slightly arcuate in front, anterior angles feebly auriculate, surface finely and rather sparsely punctate, the punctures coarser near the apex; elytra parallel near the base, gradually narrowed from the middle, but rather obtuse at the apex, disc not gibbous, the punctures moderate in size, not close, rather irregularly placed at the middle, substriate at the sides and apex, each surrounded by a fine line; thorax beneath black at the middle, red at the sides; body beneath shining black, the abdomen more coarsely and closely punctate than the elytra; legs piceous-black, tarsi brownish.

Length 8–11 millim.

*Hab.* MEXICO, Cerro de Plumas (*Höge*), Cuernavaca (*H. H. Smith*); NICARAGUA, Chontales (*Belt*).

Easily known by its colour and form, the latter being rather more elongate and less convex than usual in the genus. The submarginal groove of the elytra is entire; the prosternum is without lateral marginal line and gradually narrowed at the apex.

#### Var. **rufo-testaceus.**

Pale rufo-testaceous, elytra somewhat darker, head and underside of body piceous-black.

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This seems to bear the same relation to the normal form that the pale varieties do

to the typical *L. bicolor*. The four specimens seen are somewhat more slender, but do not show any structural differences.

### 8. **Lissomus bicolor.**

***Lissomus bicolor,*** Chevr. Col. Mex. cent. ii. fasc. 8, no. 194[1]; de Bonv. Mon. p. 119[2].

*Hab.* Mexico [1] [2], Toxpam, Cordova (*Sallé*), Cerro de Plumas (*Höge*); Guatemala, El Reposo, San Isidro, Zapote (*Champion*), Yzabal (*Sallé*).

Variable in colour above. The typical form has black elytra, the thorax red, with a broad median piceous band, the head and body beneath rufo-ferruginous. Specimens seem to be more abundant of an entirely rufo-castaneous colour. Examples rarely occur like the typical form and with the thorax entirely red.

#### Var. **rufo-castaneus.**

***Lissomus bicolor,*** var. *rufo-castaneus,* Sallé, in litt.

*Hab.* Mexico, Toxpam, Cordova, Playa Vicente, Santecomapan (*Sallé*), Cerro de Plumas (*Höge*), Teapa (*H. H. Smith*); British Honduras, Belize, R. Sarstoon (*Blancaneaux*); Guatemala, Yzabal (*Sallé*), Cubilguitz, Panzos, Teleman, Chacoj, San Juan, Purula, and Sabo in Vera Paz, El Tumbador, Cerro Zunil, El Reposo, San Isidro, Zapote (*Champion*), Coban (*Conradt*).

### 9. **Lissomus episcopalis.**

***Lissomus episcopalis,*** Gerst. Linn. Ent. 1860, p. 150[1].

*Hab.* Costa Rica [1].

This species resembles some of the forms of *L. bicolor*; but the head is black, the meso- and metathorax are piceous-brown, and the abdomen is more reddish-brown.

No specimens have been seen by me.

### 10. **Lissomus inopinatus.**

Oblong-oval, moderately robust, piceous-black, shining; thorax red, with a broad median piceous band; antennæ black, second and third joints brown: head moderately coarsely, not closely punctate, impressed in front; thorax much wider than long, sides gradually narrowed at the front, feebly arcuate and somewhat sinuous, apex not deeply emarginate, surface relatively finely and sparsely punctate; scutellum smooth; elytra scarcely gibbous, parallel at the sides, arcuately and rather obtusely narrowed at the apical third only, surface very finely and distantly striate-punctate, submarginal line entire; body beneath entirely black, except the sides of the prothorax, which are red; metasternum and abdomen moderately coarsely but not closely punctate; legs piceous-brown, tarsi paler.

Length 5·5–8 millim.

*Hab.* Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).

Like *L. bicolor*, this species varies from the normal colour to entirely rufo-castaneous. It is, however, always shining black beneath, and has the head black. Superficially,

the species resembles *L. bicolor*, but the colour of the head and underside readily separates it. In form it is also less gibbous, and at the apex more obtuse. The preceding species, *L. episcopalis*, is also related, but this too differs in colour.

The males have the thorax more narrowed in front, and the sides nearly straight.

### 11. **Lissomus discedens.**

*Lissomus discedens*, de Bonv. Mon. p. 126[1].

*Hab.* PANAMA, Bugaba, David, San Lorenzo, Tolé (*Champion*).—COLOMBIA[1].

This species is readily known by the parallel prosternum, which has on each side between the coxæ a distinctly impressed marginal line extending nearly round the apex. The thorax is sparsely clothed with silvery-white hairs at the sides, similar hairs extending on the sides of the elytra to the apex.

### 12. **Lissomus flavipennis.**

*Lissomus flavipennis*, Guérin, Rev. Zool. 1844, p. 257[1]; de Bonv. Mon. p. 121[2]; Gerst. Linn. Ent. 1860, p. 151[3].

*Hab.* MEXICO[1 2 3], Mirador, Juquila (*Sallé*), Jalapa (*Höge*, *M. Trujillo*), Cerro de Plumas (*Höge*); GUATEMALA, Sinanja, Purula, Cerro Zunil (*Champion*).

In addition to its size and colour, which make this a conspicuous species, another character is present which seems to have escaped notice. On the metasternum there will be observed an elevated line beginning behind the middle coxæ, curving backward, then outward, and joining the suture at the side of the metasternum. All the other species have but a rudiment of this line.

## DRAPETES.

*Drapetes*, Redtenbacher, Fauna Austriaca, ed. 1, p. 290 (1848); de Bonvouloir, Mon. des Throscides, p. 35.

*Lissodes*, Latreille, Fam. Nat. p. 248 (pars).

The species of this genus are of rather small size, usually bicoloured, or with the elytra maculate or banded. Fortunately the literature is but little scattered, and is either monographic or supplementary thereto, so that the identification of the species is by no means difficult, although some of the characters used in their separation have questionable value.

In an examination of a large series of several species the form varies notably from oblong-oval to oblong, as will be observed in *D. sellatus*. The basal depression can hardly be relied on without accessory characters, nor has the sutural stria any value, as in several species, notably *D. brunneus*, this stria may be either distinct or entirely wanting.

The carina of the hind angles of the thorax will prove useful to group the species. As a general rule, the elongate and maculate species have a sharply defined carina.

The number of new *Drapetes* from the Guatemala and Panama regions is relatively very large, and some of them cannot be made to associate with the species in de Bonvouloir's table; the following brief tabular arrangement of their more striking characters will assist in their identification :—

| | | |
|---|---|---|
| | Sides of the elytra without supplementary marginal carina . . | 2. |
| | Sides of the elytra with supplementary marginal carina . . . | 6. |
| 2. | Prosternum bisulcate; entirely black . . . . . | 1. *aterrimus*. |
| | Prosternum quadrisulcate . . . . . | 3. |
| 3. | Body uniform in colour . . . . . | 4. |
| | Elytra more or less marked with red or yellow . . . . . | 5. |
| 4. | Entirely black . . . . . | 2. *nigricans*. |
| | Rufo-testaceous or castaneous . . . . . | 3. *brunneus*. |
| 5. | Elytra with a transverse red band, more or less median . . . | 4. *semirufus* *; 5. *lateralis* *; 6. *sellatus*; 7. *balteatus*; 8. *affinis* *. |
| | Elytra merely tipped with black . . . . . | *sellatus*, var. *apicalis*. |
| | Elytra entirely rufo-castaneous . . . . . | *sellatus*, var. *castaneipennis*. |
| 6. | Body above bicoloured or with ornate elytra . . . . . | 7. |
| | Body above entirely black . . . . . | 16. |
| 7. | Thorax entirely black . . . . . | 8. |
| | Thorax not entirely black . . . . . | 14. |
| 8. | Elytra transversely banded; no distinct carina at the hind angles of the thorax . . . . . | 9. |
| | Elytra maculate or with a broad vitta or a whitish selliform space, or red at the apex; hind angles of the thorax carinate . . . . . | 10. |
| 9. | Oblong-oval; the anterior edge of the elytral band parallel with the base of the abdomen . . . . . | 9. *grandis*. |
| | Elongate. | |
| | Elytral band behind the middle, its anterior edge straight . | 10. *cingulatus*. |
| | Elytral band in front of the middle, its anterior edge on each side oblique and arcuate. . . . . | 11. *semicinctus*. |
| 10. | Elytra with one or two oval spots on each . . . . . | 11. |
| | Elytra with a yellowish-white selliform space covering the greater part of the area . . . . . | 12. *plagiatus*. |
| | Elytra with a broad vitta on each, broadest in front . . . . | 13. *tæniolatus*. |
| | Elytra red at apical fifth; quite small species . . . . . | 23. *hæmorrhoidalis*. |
| 11. | One spot on each elytron near the apex . . . . . | 14. *bipustulatus*. |
| | Two spots on each elytron. . . . . | 12. |
| 12. | Anterior spot at the humeral angle . . . . . | 15. *quadrisignatus*. |
| | Anterior spot posterior to the humerus . . . . . | 13. |
| 13. | Basal depression of the thorax distinct and smoother . . . . | 16. *quadrimaculatus*. |
| | Basal depression indistinct, punctate . . . . . | 17. *quadrinotatus*. |

* These species are unknown to me and cannot satisfactorily be tabulated.

14. Thorax entirely red; head red . . . . . 18. *ruficollis*; 19. *sanguinicollis*.
Thorax red, with a small piceous spot at the middle of the apical and basal margins; head black . . . . . 20. *nigriceps*.
Thorax largely piceous at the middle . . . . . 15.
15. Sparsely punctate, shining; carina of the hind angles short; prosternal carinæ unequal . . . . . 22. *marginicollis*.
Rather densely punctate; carina of the hind angles long; prosternal carinæ equal . . . . . 21. *punctulatus*.
16. Thorax unusually coarsely punctate; form elongate; elytra with a band of cinereous pubescence behind the middle; legs black . . . . . 26. *niger*.
Thorax not unusually coarsely punctate; form at most oblong; pubescence very sparse; legs red . . . . . 17.
17. Form rather oval; antennæ pale rufo-testaceous . . . . . 24. *ovalis*.
Form oblong; antennæ brown, except at the base . . . . . 25. *pusillus*.

## 1. Drapetes aterrimus.

Oblong, moderately elongate, black, shining: head not impressed, sparsely punctate; thorax wider than long, narrowed at the front, sides posteriorly straight, anteriorly arcuate, disc sparsely punctate, the posterior faint impression limited in front by the usual reversed **W**-line, the outer branches of which are moderately oblique, the inner branches as well open as in the letter **V**; elytra very sparsely and rather finely punctate without serial arrangement, no sutural stria, outer side without supplementary border; prosternum sparsely punctate in front, smooth posteriorly, and with a single ridge on each side, propectus coarsely, sparsely punctate; metasternum smooth, with few punctures at the front angles; abdomen smooth at the middle, sparsely punctate at the sides; legs black, tarsi piceous.
Length 5–6 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

Resembles *D. nigricans* superficially, but is less punctate above, and with but one carina on each side of the prosternum, by means of which it may be distinguished from any species in the Central-American fauna.

## 2. Drapetes nigricans.

*Drapetes nigricans*, de Bonv. Mon. p. 54[1].

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA[1].

One of the few species entirely black. A little variable in the distinctness of the transverse line which limits the posterior depression.

## 3. Drapetes brunneus.

*Drapetes brunneus*, de Bonv. Mon. p. 53, t. 2. fig. 4[1].

*Hab.* MEXICO[1], Toxpam, Cordova (*Sallé*); GUATEMALA, San Juan, Chacoj, and Cubilguitz in Vera Paz, Rio Naranjo (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, David (*Champion*).

Colour entirely ferruginous or pale castaneous. It is not improbable that this is merely a colour variation of *D. nigricans*.

### 4. Drapetes semirufus.

*Drapetes semirufus*, de Bonv. Mon. p. 56[1].

*Hab.* Mexico[1].

Evidently closely related to *D. balteatus*, but with the front angles of the thorax red. No specimens have been seen by me.

### 5. Drapetes lateralis.

*Drapetes lateralis*, de Bonv. Mon. p. 58[1].

*Hab.* Mexico[1].

Closely related to *D. balteatus*, some of the varieties of which it resembles superficially. The only difference seems to be in the black inflexed sides of the elytra. No specimens have been seen by me.

### 6. Drapetes sellatus.

*Drapetes sellatus*, de Bonv. Mon. p. 59, t. 2. fig. 5[1].

*Hab.* Mexico, Cordova (*Sallé*), Cerro de Plumas (*Höge*); Guatemala, San Gerónimo, San Juan, and Chiacam in Vera Paz (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia[1]; Brazil[1].

The only constant difference between this species and *D. balteatus* is in the more oval form of the latter. Typical *D. sellatus* have the basal two-thirds of the elytra red, while in *D. balteatus* there is a basal black space; but examples of the latter occur with colours similar to those of *D. sellatus*, while specimens of this are frequent with a post-scutellar black triangular mark.

#### Var. apicalis.

Entirely red above and beneath, except the head and the tip of the elytra which are piceous.

*Hab.* Panama, Volcan de Chiriqui, Caldera (*Champion*).

#### Var. castaneipennis.

Colour black, elytra entirely red, somewhat castaneous, without apical spot.

*Hab.* Guatemala, San Juan in Vera Paz, Zapote (*Champion*).

### 7. Drapetes balteatus.

*Drapetes balteatus*, de Bonv. Mon. p. 61[1].

*Hab.* Mexico[1], Vera Cruz, Toxpam, Cordova (*Sallé*), Jalapa, Cerro de Plumas (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, San Juan, Chacoj, Cahabon,

Senahu, and San Gerónimo in Vera Paz, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*).

The differences between this and the preceding species have been referred to. The colour varies somewhat above and beneath, as does also the distinctness of the thoracic punctuation posterior to the transverse line.

### 8. **Drapetes affinis.**

*Drapetes affinis*, de Bonv. Mon. p. 66 [1].

*Hab.* MEXICO [1].

Evidently very close to *D. balteatus*, but has not been identified by me.

### 9. **Drapetes grandis.**

*Drapetes grandis*, de Bonv. Mon. p. 69, t. 3. fig. 1 [1].

*Hab.* MEXICO [1], Toxpam, Cordova (*Sallé*).

The largest species in the Central-American fauna. The lateral supplementary line of the elytra is rather feebly developed.

### 10. **Drapetes cingulatus.** (Tab. X. fig. 4.)

Oblong elongate, black, shining; elytra with a broad red parallel-sided band, the anterior edge of this being opposite the base of the abdomen and wider than the length of three ventral segments; abdomen red, apical segments black; antennæ black, the underside of the first joint red: head sparsely, finely punctate; thorax distinctly wider at the base than long, sides feebly arcuately narrowing to the front, disc sparsely punctate, more coarsely at the hind angles, basal depression distinct but not limited in front, its area smooth; elytra very finely and distantly substriate-punctate, the supplementary marginal line very distinct; abdomen sparsely punctate; legs piceous, tarsi paler.
Length 4·5 millim.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

Similar in form to *D. semicinctus*, but with the red band of the elytra post-median and entirely encircling the body, that on the abdomen wider. Two specimens.

### 11. **Drapetes semicinctus.**

Oblong, moderately elongate, black, shining; elytra with a yellowish band in front of the middle, this being narrower at the suture, and not interrupted, and not extending on the epipleuræ; antennæ black, first joint red: head sparsely punctate; thorax nearly as long as wide at the base, sides feebly arcuate, narrowed at the front, the entire surface relatively coarsely punctate, the posterior depression scarcely evident; elytra very much more finely punctate than the thorax, the punctuation sparse and irregular, the marginal supplementary stria well defined; body beneath entirely black, shining, abdomen punctate and sparsely pubescent.
Length 4·5 millim.

*Hab.* MEXICO, Cerro de Plumas (*Höge*).

This species has the form of *D. bipustulatus*, with a style of band resembling

that of *D. balteatus*. It is most closely related to the latter; but the band does not extend on the epipleuræ, the thoracic impression is very indistinct, the form is more elongate, and the supplementary line is here present. One specimen.

### 12. **Drapetes plagiatus.**

*Lissomus plagiatus*, Boh. Kongl. Svenska Freg. Eugen. Resa, Ins. p. 66 [1].
*Drapetes plagiatus*, Gerst. Linn. Ent. p. 174 [2].
*Drapetes præustus*, de Bonv. Mon. p. 79, t. 3. fig. 4 [3].

*Hab.* British Honduras, Belize (*Blancaneaux*); Guatemala, Yzabal (*Sallé*), San Juan in Vera Paz, El Tumbador (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia [2 3]; Orinoco [2]; Brazil [2], Island of Santa Catarina [3]. [California, San Francisco [1], erroneous locality.]

Easily known by the elongate form and the yellowish-white space which covers the larger part of the elytral area, narrowly divided by the suture. The elytra are seriately punctate, each puncture bearing a short whitish hair.

### 13. **Drapetes tæniolatus.** (Tab. X. fig. 5.)

Oblong, moderately elongate, similar in form to *D. plagiatus*, black, shining, legs red, each elytron with a very elongate-oval yellowish-white stripe beginning a little behind the base and extending to four-fifths of its length; antennæ black, the two basal joints pale red: head sparsely punctate; thorax nearly as long as wide at the base, sides feebly arcuately narrowing to the front, moderately coarsely punctate at the base, more finely in front, the basal depression scarcely evident, the punctures in the area somewhat strigose longitudinally; elytra extremely finely and sparsely punctate over the larger part, but more closely and distinctly along the suture and at the apex, the supplementary marginal line distinct; abdomen nearly smooth at the middle, last segment and sides punctate.
Length 3–3·5 millim.

*Hab.* Panama, Volcan de Chiriqui (*Champion*).

This insect might be suspected to be a variety of *D. plagiatus* with the sellate space broadly divided at the middle; but the broad vitta is of regular form, not sinuate on its outer side, and barely reaches the submarginal line in front. There is no pubescence above. Four specimens.

### 14. **Drapetes bipustulatus.**

*Drapetes bipustulatus*, de Bonv. Mon. p. 75 [1].

*Hab.* British Honduras, Belize (*Blancaneaux*); Guatemala, San Isidro (*Champion*); Nicaragua (*Sallé*), Chontales (*Janson*); Panama, Bugaba (*Champion*).—Colombia [1].

An elongate species, entirely black, except a small, oval, yellow spot on each elytron behind the middle.

### 15. **Drapetes quadrisignatus.**

*Drapetes quadrisignatus*, de Bonv. Ann. Soc. Ent. Fr. 1861, p. 354, t. 8. fig. 6 [1].

*Hab.* GUATEMALA, Chacoj in Vera Paz (*Champion*).—AMAZONS, Ega (*Bates* [1]).

Easily known by the elytra having each two yellow spots, the larger at the humerus extending on the epipleuræ.

### 16. **Drapetes quadrimaculatus.**

Very similar in form and coloration to *D. quadripustulatus*: antennæ entirely black; thorax nearly as long as wide, sides feebly arcuately narrowing to the apex, disc coarsely sparsely punctate, with a smoother posterior depression limited in front by the usual **W**-line, the outer branches of which are nearly transverse, the **V** small; elytra sparsely, indistinctly, and irregularly punctate, with two yellow-red spots on each—the anterior larger, posthumeral, and not extending on the epipleuræ, the posterior smaller and near the apex; body beneath and legs black; abdomen sparsely punctate, with few silvery-white hairs.

Length 3–4·5 millim.

*Hab.* MEXICO, Rincon in Guerrero, Atoyac (*H. H. Smith*), Cerro de Plumas (*Höge*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Zapote (*Champion*); PANAMA, Bugaba (*Champion*).

While closely resembling the N.-American *D. quadripustulatus*, de Bonv., it differs from it in the distinctly limited depressed space of the thorax, the entirely black epipleuræ, and the black antennæ.

### 17. **Drapetes quadrinotatus.**

Oblong, rather elongate, black, shining; each elytron with two irregularly oval spots, the anterior the larger and not extending beneath the supplementary marginal line; antennæ piceous, basal joint red: head sparsely punctate; thorax nearly as long as wide, sides feebly arcuate to the apex, disc coarsely sparsely punctate over the entire surface, without depressed basal space and without the **W**-line; elytra sparsely, finely, and irregularly punctate; body beneath shining black; abdomen sparsely punctate, with few silvery-white hairs; legs somewhat piceous.

Length 3–3·5 millim.

*Hab.* BRITISH HONDURAS, Belize (*Blancaneaux*).

With a superficial colour-resemblance to the other four-spotted species, this has the form quite as elongate as in *D. plagiatus*. Having entirely black epipleuræ, it is more nearly related to *D. quadrimaculatus*, from which it differs in form and by the absence of any distinctly limited depressed space on the thorax.

### 18. **Drapetes ruficollis.**

*Drapetes ruficollis*, de Bonv. Mon. p. 81 [1].

Head and thorax above and beneath, and the basal joint of the antennæ, reddish-yellow; the remainder of the body black.

*Hab.* MEXICO [1], Cordova (*Sallé*), Cerro de Plumas (*Höge*); GUATEMALA, Cerro Zunil, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

### 19. **Drapetes sanguinicollis.**

*Drapetes sanguinicollis*, de Bonv. Ann. Soc. Ent. Fr. 1860, p. 361, t. 8. fig. 7 [1].

*Hab.* Mexico [1].

Very close to *D. ruficollis*, and from the description differs only in its somewhat more elongate and depressed form.

### 20. **Drapetes nigriceps.**

*Drapetes nigriceps*, de Bonv. Mon. p. 84 [1].

*Hab.* Mexico [1], Cerro de Plumas (*Höge*).

Very like *D. ruficollis*, but with a black head and a small piceous spot at the middle of the apical and basal margins of the thorax. The elytra are more often blue-black.

### 21. **Drapetes punctulatus.** (Tab. X. fig. 3.)

Oblong, less convex than usual, piceous-black, feebly shining, cinereo-pubescent over the entire surface; sides of thorax above and beneath broadly yellow; antennæ black: head piceous or partly ferruginous anteriorly, relatively coarsely and moderately closely punctate, interocular carina extending across the front, the clypeus at the base extremely narrow; thorax but little wider at the base than long, sides feebly arcuately narrowing to the apex, carina of the hind angles extending halfway to the apex and continued by a smooth line very nearly to the apex, the depressed area well marked but not sharply limited in front, the V-line quite distinct, surface rather closely and relatively coarsely punctate (except at the depressed area, where the punctures are very fine), reddish-yellow, a triangular piceous space at the apex and a larger one at the base, these united rather broadly at their apices; elytra arcuately narrowed nearly from the base, the surface rather densely punctate, more finely than the thorax, but more coarsely at the sides than at the middle, clothed with cinereous pubescence forming a broad common band from the base nearly to the apex, the hairs directed transversely, lateral border and apex cinereo-pubescent, the narrow space between the median band and sides with brownish pubescence, supplementary marginal line distinct; prothorax beneath black, coarsely punctate and broadly yellow at the sides; abdomen moderately coarsely and closely punctate, with sparse cinereous pubescence; legs piceous, tarsi testaceous.

Length 3·5–4 millim.

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This species is remarkable by the close punctuation of the entire surface as well as by the well-marked pubescence. The extreme narrowness of the clypeus at the base is also unusual. Three examples.

### 22. **Drapetes marginicollis.**

Oblong oval, piceous-black, shining, sparsely pubescent; hairs of the elytra seriately placed; thorax beneath entirely, above indefinitely, yellow at the sides, more widely in front; antennæ flavo-testaceous: head yellowish in front, piceous along the occiput, moderately coarsely, not closely punctate; thorax nearly one third wider at the base than long, sides gradually arcuate to the front, disc moderately punctate (not closely), gradually more finely to base, the basal depression not at all distinct; elytra striately punctate, the punctures not distant, submarginal stria distinct; body beneath piceous-black; abdomen moderately closely punctate; prosternum quadristriate, the outer striæ short and very close to the inner; legs flavo-testaceous.

Length 2·5 millim.

*Hab.* Guatemala, Mirandilla (*Champion*).

Not a conspicuous species, but readily known among the smaller ones by the sides of the piceous thorax being indefinitely yellow, more widely in front, and by the unequal striæ of the prosternum.

### 23. **Drapetes hæmorrhoidalis.** (Tab. X. fig. 2.)

Oblong-oval, piceous-black, shining; apical fifth of the elytra red; antennæ and legs pale rufo-testaceous; surface sparsely clothed with cinereous pubescence, that on the elytra nearly erect and in regular rows: head sparsely punctate; thorax one third wider at the base than long, sides arcuately narrowed to the front, surface moderately, not closely, punctate, its posterior depression faintly marked, smoother, limited in front by a transverse row of punctures; elytra a little more finely punctate than the thorax, substriately at the base, irregularly near the apex, submarginal supplementary stria well marked; body beneath black, sparsely pubescent; abdomen more closely punctate than the upper surface.
Length 2–2·25 millim.

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This species is the only one in which the elytra are simply tipped with red.

### 24. **Drapetes ovalis.**

Oval, slightly oblong, piceous-black, shining; antennæ and legs pale rufo-testaceous; last ventral segment sometimes piceo-testaceous or brown: head rather coarsely, not closely, punctate; thorax one half wider at the base than long, sides arcuately narrowed to the front, disc rather coarsely and closely punctate, the posterior depression broad, limited in front by a transverse row of punctures, behind which the surface is almost smooth; elytra finely, irregularly, not very sparsely punctate, the supplementary stria well marked; abdomen moderately closely and coarsely punctate at the sides and apex.
Length 2–3 millim.

*Hab.* Nicaragua (*Sallé*), Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Easily known by its entirely black colour and conspicuously pale antennæ and legs. The prosternal sulci are closely approximated, so that the median portion is no wider than one of the lateral carinæ.

### 25. **Drapetes pusillus.**

Oblong-oval, piceous-black, shining, sparsely clothed with cinereous pubescence without definite arrangement on the elytra; antennæ brown, the three basal joints yellowish-testaceous: head moderately closely punctate; thorax about one fourth wider at the base than long, sides feebly arcuately narrowed to the apex, surface not closely punctate except at the hind angles, posterior depression indistinct, not limited in front, smoother; elytra a little more finely and sparsely punctate than the thorax, punctures without definite arrangement, supplementary marginal stria well marked; abdomen moderately closely punctate at the sides and apex, sparsely pubescent; legs yellowish-testaceous.
Length 2 millim.

*Hab.* Guatemala, San Juan, Cubilguitz, Chacoj, and La Tinta, all in Vera Paz (*Champion*).

May be distinguished from *D. ovalis* by its more elongate form, pubescent surface,

small size, and darker antennæ. The prosternal carinæ are of equal length, and extend two-thirds the length of the prosternum.

### 26. **Drapetes niger.** (Tab. X. fig. 1.)

*Drapetes niger*, de Bonv. Mon. p. 78, t. 3. fig. 5 [1].

*Hab.* Mexico [1], Teapa (*H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Guatemala, Chacoj and Panzos in Vera Paz, El Tumbador, Zapote (*Champion*); Panama, Bugaba, Taboga I. (*Champion*).

A moderately elongate, entirely black species, sparsely clothed with silvery-white pubescence, which forms a denser transverse band across the elytra behind the middle, widest at the suture and narrowed outwardly. The unique example described by de Bonvouloir was evidently a badly preserved specimen.

## THROSCUS.

*Throscus*, Latreille, Gen. Crust. et Ins. ii. p. 37 (1807); de Bonvouloir, Mon. des Throscides, p. 1 (pars).

*Trixagus*, Kugelann, Schneid. Mag. v. p. 535 (1794).

*Trixacus*, Redtenbacher, Fauna Austriaca, ed. 2, p. 402.

There does not yet seem to be accord regarding the name to be accepted for this genus, and more than necessary seems to have been published in favour of the one or the other.

It is proposed to restrict the genus to those species which have no abruptly defined groove on the metasternum for the reception of the middle tarsi. As thus defined, probably all the European species remain here, together with *T. alienus*, *T. chevrolati*, *T. parvulus*, *T. mendax*, *T. sejunctus*, *T. sericeus*, and *T. debilis* of the North-American fauna and the two described below.

On examining the metasternum of *Throscus* as thus restricted there will be observed a faint oblique depression directed towards the side, in some cases limited by a finely elevated line for the reception of the middle tarsi in repose.

### 1. **Throscus auctus.**

Piceous, moderately shining, finely pubescent; legs rufous: eyes entire, not invaded by a canthus; head distinctly punctate, without trace of carinæ; thorax not quite twice as wide at the base as long, sides regularly arcuate to the apex, disc feebly convex, sparsely but distinctly punctate, more closely at the hind angles, which have a fine carina close to the margin; elytra distinctly striate, striæ finely, not closely, punctate, a little more distinctly toward the apex, intervals flat, irregularly uniseriately punctate; abdomen sparsely punctate, finely pubescent; prosternal striæ entire; prosternum smooth.

Length 1·5 millim.

*Hab.* Panama, Tolé (*Champion*).

Closely allied to the North-American *T. alienus*, but differs in the form of the thorax and by the short carina of the hind angles. There is also no deep subhumeral depression of the marginal stria.

### 2. **Throscus trivialis.**

Reddish-brown, sparsely pubescent: eyes entire, not compressed nor invaded by the canthus; front convex, sparsely indistinctly punctate, without trace of carina; thorax not twice as wide at the base as long, sides regularly arcuately narrowed to the apex, disc feebly convex, sparsely, finely, and indistinctly punctate, hind angles without trace of carina; elytra distinctly striate, striæ finely, not closely punctate, a little more coarsely at the apex, intervals flat, extremely finely biseriately punctate; prosternal striæ entire; abdomen sparsely punctate at the sides and apex; body beneath paler than above.

Length 1·75 millim.

*Hab.* PANAMA, David (*Champion*).

Evidently related to the North-American *T. alienus*, but this has the sides of the thorax rather oblique than arcuately narrowed. There is no carina in the hind angles in the present species, while there is one very distinct but close to the margin in that species.

## AULONOTHROSCUS.

This name is suggested for a portion of those species which, until now, have been associated with *Throscus*, and which differ in the presence of a deep, sharply defined groove in the metasternum, beginning at the middle coxæ and slightly curving outwardly, terminating at the posterior angle of the metasternum. In all other respects the characters are those of *Throscus*. The character and position of this groove are sufficiently illustrated in a sketch published by me of *Pactopus* (Trans. Am. Ent. Soc. xii. p. 205), which goes one step further by the presence of similar grooves on the abdomen.

To *Aulonothroscus*, in addition to those given below, the following North-American species must be referred, viz.: *T. validus*, *T. punctatus*, *T. invisus*, *T. constrictor*, *T. convergens*, and *T. pugnax*, together with several undescribed species from Brazil recently examined in the collection of M. Ed. Fleutiaux.

### 1. **Aulonothroscus schaumi.**

*Throscus schaumii*, de Bonv. Ann. Soc. Ent. Fr. 1860, p. 352, t. 8. fig. 1[1].

*Hab.* GUATEMALA, Coban (*Conradt*), Senahu and Capetillo (*Champion*).—BRAZIL[1].

In this species the eyes are triangularly emarginate in front. The front has two well-defined carinæ, which converge to the base of the clypeus and then diverge along the outer edge. Opposite the eye a fine carina begins, and passes from the main carina into the eye. This latter de Bonvouloir describes and figures as passing across the base of the clypeus, but the appearance is purely deceptive. There is sometimes present a

short median carina on the front; but in one of the three specimens before me it is not present.

The thorax has a fine but acute carina parallel with the lateral margin, not mentioned by de Bonvouloir, but shown in Migneaux's excellent figure.

### 2. Aulonothroscus gradatus.

Piceous, clothed with yellowish-cinereous pubescence, some of which along the elytral intervals is longer and more erect: eyes entire but invaded by the canthus of the front; head ferruginous, indistinctly punctate, obtusely bicarinate, the carinæ slightly converging to the base of the clypeus, but not continued; thorax more than twice as wide as long, sides regularly arcuate to the front, disc rather flat, sparsely punctate at the middle, more closely at the sides, hind angles finely carinate; elytra very indistinctly striate, striæ finely and indistinctly punctate at the base, gradually more and more coarsely and deeply to the apex, intervals flat, confusedly biseriately punctate at the base, becoming uniseriate behind the middle; prosternal striæ long; abdomen sparsely punctate, pubescent; legs brownish, tarsi testaceous.

Length 3 millim.

*Hab.* GUATEMALA, Quiche Mountains 7000 to 9000 feet (*Champion*).

This species has entire eyes, but the canthus is prolonged over the eye as it is in *A. schaumi*. The thorax, when examined under a high power, is quite closely punctulate between the punctures observed in the usual manner. *A. gradatus* is not especially related to any of the species described, but resembles *A. schaumi* in form, although less broad. The prolonged canthus and elytral punctuation will readily distinguish it among those with entire eyes and bicarinate front.

### 3. Aulonothroscus fraternus.

Piceous, clothed similarly to *A. gradatus*: eyes entire, the canthus of the front not prolonged over them; head nearly smooth, obtusely bicarinate, the carinæ short; thorax not twice as wide at the base as long, sides regularly arcuate to the apex, hind angles finely carinate, disc feebly convex, sparsely punctate over the entire surface, the intervals between the punctures rather shining; elytra not distinctly striate, the striæ indicated by fine distant punctures, which become quite coarse at the apical third, intervals flat, apparently uniseriately irregularly punctate; prosternal striæ entire; abdomen sparsely punctate and pubescent; legs reddish, tarsi paler.

Length 2 millim.

*Hab.* GUATEMALA, El Tumbador, Dueñas, Guatemala city, Cubilguitz (*Champion*).

An inconspicuous species, differing from *A. gradatus* by the more sparsely punctate and smoother thorax, and the somewhat different elytral sculpture, and by the canthus not being prolonged over the eye.

## Fam. EUCNEMIDÆ *.

The question can hardly be considered definitely settled regarding the status of the insects which constitute the series now under consideration. Opinions differ among those who have specially studied the Eucnemidæ, and the weight seems about equally balanced (1) in favour of retaining them as a separate family, or (2) considering them part of the Elateridæ. Several years ago, in discussing the species of the North-American fauna, the latter view was adopted by me, as there did not seem to be any character or assemblage of characters of sufficient value to define a family of Coleoptera. As the discussion of matters of this kind is hardly within the scope of a work of the character of the present one, the family is assumed to be distinct.

The Eucnemidæ are, for the most part, rare; and but few collections contain a sufficient number either of species or genera to enable a definite idea of the family to be formed. The masterly monograph by de Bonvouloir marked an era and gives the basis for any future studies. In Coleopterous literature but few works are comparable with it in the evidence it gives of patient and accurate research. A successful or satisfactory use of the work requires not only patient study but a correct understanding of what might be called the "personal equation" in the use of terms and choice of words to convey ideas.

At the present time the family contains ninety genera and about 475 species. The following pages add six genera and fifty-six species, making a total of ninety-six and 531. Of this total the Central-American fauna is now known to possess thirty-two genera and 108 species. Thirteen genera and three species are represented in common in Boreal and Central America, while twenty-one genera and as many species occur in Central and Tropical South America, including Brazil. One genus, *Trigonopleurus*, occurs also in Australia; but from the numerous errors of locality observed in the Monograph, more especially in species referred to Boreal America, there may be reason to doubt the accuracy of the above-mentioned statement. The errors of habitat in the 'Catalogus Coleopterorum' are still more numerous.

At the present time no satisfactory comparison can be made of the number and distribution of species in the Central-American fauna and any other equal region. Our knowledge of the Mexican species is due almost entirely to the collections made by M. A. Sallé in a limited region, while the results obtained by Mr. G. C. Champion in Guatemala and Panama show what can be expected from patient work elsewhere.

The material amassed by M. A. Sallé forms part of our collection, and includes the typical specimens of nearly all the species described by de Bonvouloir from Mexico.

* By G. H. Horn.

In order that the genera at present known in the Central American fauna may be determined, the following table has been prepared. As it represents but a third of the known genera of the family it has been possible to avoid some of the more difficult-to-realize characters used by de Bonvouloir.

1. Posterior coxæ deeply inserted in their cavities, without coxal plates . . . . . *Cerophytum.*
   Posterior coxæ with distinct plates, which more or less cover the femora in repose . . . . . 2.
2. Marginal carina of the pronotum parallel with the prosternal sutures.
   Legs and tarsi stout and broad . . . . . *Melasis.*
   Legs and tarsi slender . . . . . *Isorhipis.*
   Marginal carina and prosternal sutures convergent in front . . . 3.
3. Abdomen with longitudinal grooves for the reception of the posterior tarsi . . . . . *Gastraulacus.*
   Abdomen not grooved . . . . . 4.
4. Prosternal sutures excavated to form the antennal cavities . . . 28.
   Prosternal sutures not excavated; but there may be a juxta-sutural sulcus . . . . . 5.
5. Posterior coxal plates dilated internally, or when parallel (*Microrhagus*) the thorax has supplementary carinæ . . . . . 6.
   Posterior coxal plates broad and nearly parallel; thoracic margin simple; a marginal sulcus . . . . . 21.
6. Propleuræ with marginal antennal groove . . . . . 7.
   Propleuræ without marginal groove . . . . . 16.
7. Metasternum with a distinct longitudinal groove beginning at the outer end of the middle coxal cavities . . . . . 8.
   Metasternum without an impressed line . . . . . 9.
8. Metasternum with a short oblique elevated line beginning at the anterior outer angle . . . . . *Pœcilochrus.*
   Metasternum without oblique elevated line in front . . . . . *Idiotarsus.*
9. Marginal groove continued on the head without being narrowed by the eyes . . . . . 10.
   Marginal groove much narrowed by the eyes . . . . . 13.
10. Antennal groove sharply limited on the inner side; last ventral segment not prolonged in a point . . . . . 11.
    Antennal groove not sharply limited on the inner side; antennæ broadened and flat; last ventral segment prolonged in a point . *Eurachis.*
11. Marginal groove at least wider than half the propleural triangle.
    Groove wider in front; fourth tarsal joint excavate-emarginate . . . . . *Phænobolus.*
    Groove much wider behind; fourth tarsal joint simple . . *Deltometopus.*
    Marginal groove narrower than half the propleural triangle . . 12.

12. Propleural triangle as wide at the base as, or wider than, the outer side . . . . . *Thambus.*
Propleural triangle at the base always notably shorter than the outer side.
Antennæ with the third joint very small . . . . . *Diacerus.*
Antennæ with the third joint longer than the second, and usually longer than the fourth . . . . . *Dromæolus.*
13. Antennal groove sharply limited internally by the margin of the triangle of the propleuræ . . . . . 14.
Antennal groove not sharply limited internally, sometimes also punctate . . . . . *Plesiofornax.*
14. Antennal joints 4–10 similar and of nearly equal length . . . . 15.
Antennal joints 4–7 very short, not longer than wide; outer joints abruptly much longer . . . . . *Dyscolotaxia.*
15. First joint of the hind tarsus distinctly shorter than the following joints together; antennal groove very broad; antennæ (♂) strongly pectinate . . . . . *Diphytaxis.*
First joint of the hind tarsus at least as long as the following joints together; antennal groove never very wide; antennæ at most serrate.
Prosternum normally convex in front of the coxæ, the apex not elevated; mouth-parts normal . . . . . *Fornax.*
Prosternum flat, slightly concave in front of the coxæ, the apex abruptly elevated; mouth-parts much modified . . *Cladus.*
16. Margin of the prothorax with a single lateral ridge . . . . . 17.
Margin of the prothorax with at least two marginal carinæ; propectus with a more or less defined juxta-sutural groove . . . 22.
17. Mandibles with a broad rugose surface, the lower border more or less prolonged backward . . . . . 18.
Mandibles with a narrow surface, the lower border not prolonged; fourth tarsal joint simple . . . . . 20.
18. Last ventral segment not prolonged in an acute point; antennæ flattened, joints 2, 3, 4 equal in length . . . . . *Henecosoma.*
Last ventral segment acutely prolonged . . . . . 19.
19. Fourth tarsal joint excavate-emarginate.
Metathoracic episterna parallel-sided . . . . . *Nematodes.*
Metathoracic episterna narrowed in front . . . . . *Trigonopleurus.*
Fourth tarsal joint slender and simple . . . . . *Emathion.*
20. Prosternal sutures straight; last three joints of the antennæ abruptly longer . . . . . *Phlegon.*
Prosternal sutures arcuate; antennal joints nearly equal . . . *Anelastes.*
21. A distinct but not sharply limited marginal groove; last ventral segment abruptly prolonged in an obtuse point . . . . . *Diapodius.*
22. Propectus with a well-defined and limited juxta-sutural groove . 23.
Propectus without groove, with merely a slight and badly limited depression or smooth space . . . . . 24.

| | | |
|---|---|---|
| 23. | Antennæ with joints 2 and 3 very short, together not as long as the fourth . . . . . | *Entomophthalmus.* |
| | Antennæ with joints 2 and 3 together much longer than the fourth . . . . . | *Microrhagus.* |
| 24. | Last ventral segment obtuse at the tip . . . . . | 25. |
| | Last ventral segment acutely prolonged at the tip . . . . . | 27. |
| 25. | First joint of the hind tarsi as long as the following joints together. | *Adelothyreus.* |
| | First joint of the hind tarsi notably shorter than the following joints together . . . . . | 26. |
| 26. | Outer carina of the propleural depression entire . . . . . | *Farsus.* |
| | Outer carina of the propleural depression extending only halfway to the base . . . . . | *Arrhipis.* |
| 27. | Outer carina of the propleural depression entirely absent . . . | *Adelorhagus.* |
| 28. | Metasternal episterna moderately wide, parallel-sided . . . . | *Pterotarsus.* |
| | Metasternal episterna narrow, narrowed in front . . . . . | *Thylacosternus.* |

## CEROPHYTUM.

*Cerophytum,* Latreille, Gen. Crust. et Ins. iv. p. 375 (1809); de Bonvouloir, Mon. des Eucnémides, p. 78.

*Chorea,* Haldeman, Proc. Acad. Phil. iii. p. 150.

This genus at present contains but five species; two are from temperate North America and one each from Europe, Mexico, and South America. It is an aberrant member of the family, exhibiting tendencies in the direction of the Dascyllidæ, although possessing in a moderate degree the saltatorial power of the Elateridæ.

### 1. Cerophytum fuscicorne.

*Cerophytum fuscicorne,* de Bonv. Mon. p. 84, t. 4. fig. 3 [1].

*Hab.* Mexico [1]; Panama, Volcan de Chiriqui (*Champion*).—Colombia, Cartagena [1].

One male specimen of the typical form, piceous-black, in our series. The antennæ have a structure similar to that of the males of the other species.

## MELASIS.

*Melasis,* Olivier, Ent. ii. no. 30 (1790); de Bonvouloir, Mon. des Eucnémides, p. 88.

This genus, with the following, constitutes a subdivision of the family in which the prosternal sutures are parallel to each other and to the lateral margin of the thorax, a character not commonly observed in the true serricorn series.

### 1. Melasis rufipalpis.

*Melasis rufipalpis,* Chevr. Col. Mex. cent. ii. fasc. 8, no. 193 [1]; de Bonv. Mon. p. 94, t. 4. fig. 6 [2].

*Hab.* Mexico [2], Las Vigas [1]; Guatemala, Coban in Vera Paz (*Conradt*).

One female specimen in our series. The species, like its more northern congeners, seems to be rare, as de Bonvouloir mentions two only.

## ISORHIPIS.

*Tharops*, Castelnau, in Silberm. Rev. Ent. iii. p. 168 (1835); de Bonvouloir, Mon. des Eucnémides, p. 95 (nomen præocc.).
*Isorhipis*, Lacordaire, Faun. Ent. d'env. Paris, i. p. 622.

Until the present time this genus has been represented only in Europe and temperate North America; two species are now added, one of which is from near the southern limit of our region, indicating the probable existence of others in more northern localities.

### 1. **Isorhipis vagans.**

Piceous-black, opaque, sparsely clothed with short yellowish-grey pubescence; antennæ ferruginous-brown: head densely punctate; thorax slightly broader than long, very little narrowed towards the apex, sides very feebly arcuate, surface closely coarsely punctate, median line impressed from the base to the middle, a short transverse impression on each side; elytra finely striate, striæ indistinctly punctate, intervals flat, closely granulate; body beneath concolorous, less opaque, the pubescence longer and more golden; legs entirely piceous.
Length 7 millim.

*Hab.* GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

This species is more nearly related in its form to *I. nigriceps*, the thorax being wider than long and the scutellum moderately long. It is quite different from the North-American forms.

One male.

### 2. **Isorhipis holosericea.** (Tab. X. fig. 8.)

Piceous-black, opaque, clothed sparsely with a grey silken pubescence, giving a variable lustre; antennæ piceous-black, the two basal joints rufo-testaceous: head very densely punctate; thorax slightly wider than long, sides parallel posteriorly, arcuate in front, disc moderately convex, the median impressed line extending from the base to the apex, surface very densely punctate-granulate and opaque, the pubescence directed in a varying manner; scutellum oblong, narrowed at the tip; elytra striate, striæ rather coarsely punctured, intervals flat, closely punctate, granulate at the base, smoother near the apex, surface with silken pubescence arranged in the usual longitudinal manner, except in a large oval space behind the middle, on which it is directly transverse; beneath black, closely finely punctate and with silken pubescence; legs black, tarsi rufo-testaceous.
Length 5 millim.

*Hab.* PANAMA, Bugaba (*Champion*).

Evidently related most closely to *I. obscuricornis*, from which it differs (by description) in the colour of the antennæ and legs, as well as in the arrangement of the pubescence. Two female specimens.

## GASTRAULACUS.

*Gastraulacus*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 188; de Bonvouloir, Mon. des Eucnémides, p. 112.

This genus is remarkable in that the middle and posterior tarsi are received in deep grooves in the metasternum and abdomen respectively. But one species has hitherto been known, to which another is now added.

### 1. Gastraulacus bisulcatus.

*Galba bisulcatus* (sic), Latr. Ann. Soc. Ent. Fr. 1834, p. 132 [1].
*Gastraulacus bisulcatus*, de Bonv. Mon. p. 113. t. 5. fig. 4 [2].
*Gastraulacus atratus*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 188, t. 6. figs. 50, 51 [3]. – not agreeing – H. S. Ba

*Hab.* Mexico [2 3]; Nicaragua (*Sallé*), Chontales (*Belt*).—Colombia [3]; Brazil [1 2].

### 2. Gastraulacus cavifrons. (Tab. X. fig. 9.)

Cylindrical, slightly narrowed posteriorly, robust, brownish-piceous, subopaque; antennæ ferruginous, basal joint piceous: head coarsely closely punctate, deeply impressed from the occiput to the base of the clypeus; thorax nearly one half wider than long, sides parallel posteriorly, arcuately narrowed in front, disc convex, median line impressed from a point in front of the base to three fourths of the distance to the apex, the impression sharp posteriorly, broader in front, surface rather roughly granulate, with a tendency to form rugæ, coarsely punctate at the hind angles; elytra vaguely striate, striæ indistinctly punctate, intervals slightly convex, coarsely transversely wrinkled, the juxta-sutural region elevated near the apex; body beneath coarsely, not closely punctate, metasternum and the sides of the abdomen smoother; legs rufo-piceous.
Length 13·5 millim.

*Hab.* Nicaragua, Chontales (*Belt*).

Larger and more robust than the preceding species, from which it differs notably in having the metasternal sulci very oblique, extending in an almost direct line from the outer front angles of the metasternum to near the middle of the posterior margin. In *G. bisulcatus* these sulci are for a distance parallel with the episternal suture. The ventral sulci also converge slightly and are extended in a well-defined manner on the last segment.

## IDIOTARSUS.

*Idiotarsus*, de Bonvouloir, Mon. des Eucnémides, p. 137 (1870).

This genus is readily known from any other at present represented in our fauna by the presence of the straight metasternal grooves without ventral grooves. Until the discovery of the present species the genus has been restricted to South America.

### 1. Idiotarsus estriatus.

Oblong, subcylindrical, narrowed posteriorly, piceous, shining, sparsely clothed with brownish-yellow pubescence, which tends to arrange itself in rows near the apex of the elytra: margin of the clypeus bisinuate, the lateral margins slightly elevated; head moderately closely punctate, median carina well marked, extending

to the edge of the clypeus; antennæ brown, ferruginous near the apex; thorax broader than long, sides parallel for a short distance posteriorly, then arcuately narrowing to the front, surface not closely punctate, the punctuation very sparse at the sides, a faintly impressed, smooth median line posteriorly; elytra with the sutural stria alone distinct, surface otherwise irregularly punctate, more coarsely but less densely than that of the thorax; body beneath shining, closely punctate at the sides, pubescent; legs piceous, tibiæ and tarsi paler.

Length 5–6 millim.

*Hab.* NICARAGUA, Chontales (*Janson*).

Apparently related to *I. muticus*, but with a bisinuate clypeus and elytra without striæ. The two specimens before me appear to be of different sexes, of which the male is smaller and more attenuate posteriorly.

## PŒCILOCHRUS.

*Pœcilochrus*, de Bonvouloir, Mon. des Eucnémides, p. 148 (1870).

This genus differs by very feeble characters from *Idiotarsus*. The anterior angle of the metasternum has an oblique line, which probably varies in distinctness in the different species, at all events it is quite indistinct in the species described below.

A renewed examination convinces me that the species described by myself from the North-American region as *Stethon errans* should be referred to this genus, notwithstanding the fact that both the longitudinal sulcus of the metasternum and the oblique line are quite indistinct. From this we have a wide distribution for the six species—one each from Florida, Nicaragua, Brazil, and Madagascar, and two from Borneo.

### 1. Pœcilochrus fractus.

Oblong, cylindrical, moderately convex, slightly narrower behind, brownish, feebly shining, sparsely clothed with cinereous pubescence; antennæ ferruginous, serrate from the fourth joint: head coarsely, not closely, punctate, a faint trace of a smooth median line, clypeus truncate in front; thorax distinctly wider than long, sides straight and parallel posteriorly, arcuate at the apical third, disc convex, moderately closely, not coarsely, punctate, a faint smooth median line, hind angles broadly rounded; scutellum oval, truncate at the base; elytra striate, striæ distinctly coarsely punctate at the apical third and along the sides, intervals flat, slightly convex at the apex, moderately closely submuricately punctate at the base, gradually more sparsely towards the apex; abdomen closely, moderately coarsely punctate; legs brown.

Length 8·5 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

This species is quite distinct from those with non-carinate front, either by the arrangement of the pubescence or by the structure of the antennæ.

## THAMBUS.

*Thambus*, de Bonvouloir, Mon. des Eucnémides, p. 160 (1870).

A genus composed of comparatively small species peculiar to Tropical America, with one exception. It is very closely related to *Dromæolus*.

### 1. Thambus agilis.

*Thambus agilis*, de Bonv. Mon. p. 162, t. 6. fig. 6 [1].

*Hab.* MEXICO, Cordova (*Sallé* [1]); PANAMA, Volcan de Chiriqui 2500 feet (*Champion*).

Distinguished from the following species by the presence of a distinct frontal carina.

### 2. Thambus inexspectus.

*Thambus inexspectus*, de Bonv. Mon. p. 163, t. 6. fig. 7 [1].

*Hab.* MEXICO, Cordova, Toxpam (*Sallé* [1]).

Readily known by the absence of elytral stria and the non-carinate front.

### 3. Thambus pusillus.

*Thambus pusillus*, de Bonv. Mon. p. 165, t. 6. fig. 8 [1].

*Hab.* MEXICO, Cordova, Toxpam (*Sallé* [1]); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Caldera in Chiriqui (*Champion*).

Smaller than the preceding species and narrower, with the elytra vaguely striate.

## DELTOMETOPUS.

*Deltometopus*, de Bonvouloir, Mon. des Eucnémides, p. 171 (1870).

This genus is also very closely related to *Dromæolus*, but has the antennal groove wider in comparison with the prosternal triangle, and at the same time wider posteriorly than in front.

### 1. Deltometopus foveolatus.

*Eucnemis foveolatus*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 187 [1].
*Deltometopus foveolatus*, de Bonv. Mon. p. 186, t. 7. figg. 7 (♀), 9 (♂) [2].

*Hab.* MEXICO, Coahuila (*Horn*), Fortin in Vera Cruz (*H. H. Smith*), Teapa [2]; BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, El Tumbador 2500 feet, Las Mercedes, Zapote, Paso Antonio (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Bogota [2], Cayenne [1].

## DROMÆOLUS.

*Dromæolus*, Kiesenwetter, Naturg. der Ins. Deutschl. iv. 2, p. 197 (1858); de Bonvouloir, Mon. des Eucnémides, p. 193.

This genus is one of a small number in the family with fairly numerous species, and at the same time with one or more representatives in nearly every part of the globe. As usual, in such cases, the form is variable, with a tendency to reproduce that of closely related genera, as of *Fornax* in temperate North America, and *Thambus* especially in our own fauna.

In consequence of the great increase of the number of the Central-American species, from six to fifteen, and the close resemblance between many of them, the following Table has been prepared in order to give greater prominence to the essential characters:—

Antennal grooves narrow, equal in width for their entire length.
- Prosternal sutures simple . . . . . 2.
- Prosternal sutures deeply grooved . . . . . 7.

Antennal grooves wide, much broader posteriorly . . . . . 10.

2. Interocular ridge entire . . . . . 3.
   Interocular ridge interrupted at the middle . . . . . 9.
3. Clypeus not cariniform at the base nor carinate . . . . . 4.
   Clypeus cariniform at least at the base . . . . . 8.
4. Pubescence of the elytra uniform in colour.
   - Black, slightly shining, sculpture not rugose, pubescence beneath inconspicuous; posterior edge of the propleural triangle much shorter than the inner . . . . . *mœrens*.
   - Pubescence cinereous and conspicuous, sculpture rough and subgranular; posterior edge of the propleural triangle equal to the inner . . . . . *senilis*.

   Pubescence of the elytra not uniform, sometimes forming a design . 5.
5. Head with a slight frontal carina . . . . . *cinerascens*.
   Front not carinate . . . . . 6.
6. Thorax at the middle of the base elevated in a slight longitudinal carina . . . . . *tristis*.
   Thorax at the middle near the base longitudinally impressed . . . *properus*.
   Thorax neither carinate nor impressed.
   - Elytra simply cinereo-pubescent for a short space at the base and apex only . . . . . *sallæi*.
   - Elytra cinereo-pubescent at the base and apex, also along the suture from the base . . . . . *variegatus*.
   - Elytra narrowly cinereo-pubescent at the base and apex, a narrow transverse median band connected along the suture with the base . . . . . *ornatulus*.
7. Elytra broadly cinereo-pubescent at the base and apex . . . . *tripartitus*.
8. Clypeus carinate for at least half its length; elytra striate, surface subopaque and somewhat granular . . . . . *dilutipes*.
   Clypeus carinate at the base only; elytra not striate, surface shining . . . . . *pusio*.
9. Interocular carina not or very feebly elevated, not extending downward on the clypeus.
   - Thorax densely punctate and opaque; elytra with a narrow sutural and marginal line of cinereous pubescence . . . . *suturalis*
   - Thorax not closely punctate, shining; elytra slightly cinereo-pubescent at the base . . . . . *vanus*.

Interocular carina anteriorly elevated, the inner end curving downward on the sides of the clypeus; antennæ paler at the base . *tetricus*.

10. Elytra scarcely visibly striate; antennæ and legs ferruginous; interocular carina entire, clypeus not carinate . . . . . *fastidiosus*.

The last five species are very *Thambus*-like in appearance, while those at the head of the table approach the North-American type.

### 1. Dromæolus mœrens.

Oblong, moderately convex, black, sparsely clothed with short, inconspicuous, nearly black pubescence: antennæ black, closely articulated, joint three slightly longer than four; head densely, rather coarsely punctate, a slight depression near the interocular carina, which is entire, clypeus narrow at the base, not carinate; thorax a little wider than long, gradually narrowed from the hind angles, arcuately in front, disc convex, a slight depression at the basal margin each side of the middle, surface densely punctate, more opaque than the elytra; elytra finely striate, intervals scarcely convex, moderately closely punctate, the punctures much finer than on the thorax; body beneath black, moderately shining, closely punctate, finely pubescent.

Length 4·5–6 millim.

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Closely related to *D. tristis*, which it resembles in form, but with uniform pubescence not different from the surface colour.

### 2. Dromæolus senilis.

Oblong, not very convex, narrowed posteriorly, black, subopaque, clothed with cinereous pubescence equally over the entire surface: antennæ piceous, feebly serrate, third joint one half longer than the fourth; head densely punctured and subopaque, a very slight median impressed line in front, interocular carina entire, clypeus moderately separating the antennæ at the base, not carinate; thorax a little broader at the base than long, sides arcuately convergent to the front, disc moderately convex, a short ante-scutellar carina, surface very densely punctate; elytra distinctly striate, the intervals closely subgranulately punctate, and quite rough at the base; body beneath very densely punctate and subopaque, abdomen pubescent; legs piceous.

Length 4 millim.

*Hab.* Guatemala, Zapote (*Champion*).

While this species possesses all the characters leading to its reference to *D. cinerascens* by the table given by de Bonvouloir, the absence of a frontal carina and the presence of a small one at the base of the thorax, together with the uniform pubescence and the more opaque and roughly-sculptured surface, readily distinguish it.

### 3. Dromæolus tristis.

*Dromæolus tristis*, de Bonv. Mon. p. 223, t. 9. fig. 4[1].

*Hab.* Guatemala, Yzabal (*Sallé* [1]), Teleman in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*).

Similar in form and vestiture to *D. sallæi*, but without a cinereous space at the tip of

the elytra. There is a slight frontal carina and the base of the thorax opposite the scutellum is subcarinately elevated.

### 4. Dromæolus cinerascens.

*Dromæolus cinerascens*, de Bonv. Mon. p. 224, t. 9. fig. 5 [1].

*Hab.* Mexico, Teapa (*coll. Chevrolat* [1]).

Evidently closely allied to *D. tristis*, and with a feeble frontal carina. The form of the thorax, on which de Bonvouloir places some reliance for their separation, is purely sexual. I have not seen an example of this species.

### 5. Dromæolus properus.

Similar in form and in most of its structural characters to *D. tristis*. Thorax considerably wider than long, gradually narrowed to the apex, disc convex, closely and rather coarsely punctate, a distinct longitudinal impression at the base, surface cinereo-pubescent; elytra narrowly cinereo-pubescent at the base, the pubescence extending a short distance along the suture and sides; body beneath less shining than above and more conspicuously cinereo-pubescent; abdomen closely punctate.
Length 4 millim.

*Hab.* Panama, Bugaba (*Champion*).

Easily known from *D. tristis* and *D. cinerascens* by the very distinctly impressed line near the middle of the base of the thorax.

### 6. Dromæolus sallæi.

*Dromæolus sallei*, de Bonv. Mon. p. 220, t. 9. fig. 2 [1].

*Hab.* Mexico [1], Cordova (*Sallé*).

The type of this species has the grey pubescence conspicuous on the thorax and on the base of the elytra, where it forms rather a broad band, the posterior border curving from the suture backward along the side; the apical fourth is also similarly pubescent. The figure above cited gives rather a false idea of the species.

### 7. Dromæolus variegatus. (Tab. X. fig. 10.)

*Dromæolus variegatus*, de Bonv. Mon. p. 222, t. 9. fig. 3 [1].

*Hab.* Guatemala, Sinanja in Vera Paz (*Champion*).—Amazons, Ega [1].

Similar in form to *D. sallœi*, but with the sides and base only of the thorax cinereo-pubescent. The elytral ornamentation is similar, except that the basal space extends narrowly along the suture to near the middle. In the figure given by de Bonvouloir, the parts most darkly shaded are those most densely cinereo-pubescent.

### 8. Dromæolus ornatulus. (Tab. X. fig. 11.)

Oblong, moderately convex, piceous-black, slightly shining, surface pubescent, forming a design: antennæ rather stout, closely articulated, not serrate, piceous; head densely punctate, sparsely cinereo-pubescent,

a slight concavity near the base of the clypeus, interocular carina entire, angulate at the middle, clypeus very narrow at the base, but not carinate; thorax about as long as wide at the base, sides feebly arcuately narrowed to the front, disc very closely punctate, surface clothed with cinereous pubescence, leaving a large transversely oval space bare; elytra vaguely striate, intervals feebly convex, closely punctate, somewhat rough at the base, surface in great part with nearly black pubescence, with cinereous pubescence narrowly along the base, extending along the suture and sides to the middle, joining a narrow transverse band, a small space at the apex cinereous; beneath piceous-black, feebly shining, closely punctate, abdomen cinereo-pubescent; legs piceous, tarsi paler.

Length 5·5 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

This species should be placed near *D. bellus*, from which it differs strikingly in ornamentation.

### 9. **Dromæolus tripartitus.** (Tab. X. fig. 12.)

Oblong, moderately convex, piceous-black, feebly shining, clothed in great part with cinereous pubescence: antennæ piceous; head densely, subrugosely punctate, a slight depression at the base of the clypeus, interocular carina entire, angulate in front, clypeus very narrow at the base and there carinate; thorax very nearly as long as wide at the base, sides posteriorly straight but convergent, near the front angles arcuate, disc moderately convex, an oblique impression each side of the middle of the base, very closely punctate, surface cinereo-pubescent but with a large triangular space, with the base in front, less pubescent; elytra vaguely striate, intervals not convex, closely punctate, rugulose near the base, basal third cinereo-pubescent (its posterior edge bisinuate), apical third similarly pubescent (its anterior edge bisinuate), the intermediate space formed of two oval spots broadly united at the suture, clothed with nearly black pubescence; body beneath piceous, shining, moderately closely punctate, cinereo-pubescent; legs piceous, tarsi somewhat paler.

Length 4 millim.

*Hab.* GUATEMALA, Volcan de Atitlan above 2500 feet, Zapote (*Champion*).

This species is related to *D. bellus* and *D. ornatulus*, but with quite a different design from either.

### 10. **Dromæolus dilutipes.**

*Dromæolus dilutipes*, de Bonv. Mon. p. 207 [1].

*Hab.* MEXICO, Toxpam [1], Cordova (*Sallé*), Teapa in Tabasco (*H. H. Smith*); PANAMA, Bugaba (*Champion*).

This species is readily known from the others in our fauna by its parallel form, rather roughly sculptured surface, pale antennæ and legs, entire interocular ridge, and carinate clypeus. The pale antennæ noted by de Bonvouloir is not a constant character.

### 11. **Dromæolus pusio.**

Oblong, piceous-black, shining, thorax and the base of the elytra sparsely cinereo-pubescent; antennæ pale ferruginous, the second joint shorter than the fourth, the third longer: head closely and rather coarsely punctate, interocular carina entire, clypeus extremely narrow at the base and forming a carina; thorax broader than long, gradually narrowed to the apex, the sides more arcuate in the female, disc convex, moderately coarsely, not densely punctate, at hind angles slightly depressed; elytra without trace of striæ except a faint sutural one, surface confusedly punctate, rather closely and roughly near the base, more

sparsely towards the apex; body beneath subopaque, coarsely and closely punctate, cinereo-pubescent; legs ferruginous; antennal grooves very narrow, not wider behind.

Length 3–3·5 millim.

*Hab.* MEXICO, Atoyac in Vera Cruz (*H. H. Smith*).

By de Bonvouloir's tabular arrangement this insect is related to *D. dilutipes*; but the form and the absence of striæ associate it with the Thambiform species, of which *D. fastidiosus* may be considered typical.

### 12. **Dromæolus suturalis.**

Oblong, moderately convex, piceous-black, shining, thorax opaque; sparsely cinereo-pubescent, on the elytra more evidently along the side margin and suture; antennæ rufo-testaceous at the base, outer half gradually darker, subserrate, joints three and four equal: head densely punctate and opaque, interocular carina not elevated, ending abruptly at the base of the clypeus, the latter flat, not carinate; thorax broader at the base than long, much narrowed at the apex, sides sinuate in front of the hind angles, disc convex, densely but not roughly punctate, opaque, a slight depression at the hind angles, surface sparsely cinereo-pubescent; elytra vaguely striate near the base, surface not closely submuricately punctate, pubescence sparse and piceous, cinereous along the suture and side margin; body beneath moderately closely punctate, cinereo-pubescent; femora piceous, tibiæ and tarsi rufo-testaceous.

Length 3 millim.

*Hab.* MEXICO, Xucumanatlan in Guerrero (*H. H. Smith*).

This species is evidently allied to *D. funcki*; but differs in having a less prominent interocular carina and the third joint of the antennæ not longer than the fourth, and also in the colour of the antennæ and the disposition of the cinereous vestiture. The sutural stria is not impressed at the apex as in the following three species.

### 13. **Dromæolus vanus.**

Similar in form and appearance to *D. fastidiosus* (♀); basal joint of the antennæ piceous, outer joints brown, third joint distinctly longer than the fourth: head densely punctate, sparsely cinereo-pubescent, front slightly concave, interocular carina somewhat prominent, rather broadly interrupted at the base of the clypeus, this nearly as broad as half the distance to the eye, flat; thorax broader at the base than long, sides straight and convergent, near the apex arcuate, disc convex, a feeble median longitudinal impression in front of the base, surface moderately shining, closely, not densely punctate, finely sparsely pubescent, cinereous at the sides and base; elytra vaguely striate at the base only, the sutural stria deepened and broadened at the apex, surface rather closely submuricately punctate, densely and more roughly at the base; body beneath more coarsely and closely punctate than above, somewhat strigose, sparsely pubescent; femora piceous, tibiæ and tarsi pale rufo-testaceous.

Length 4 millim.

*Hab.* MEXICO, Atoyac in Vera Cruz (*H. H. Smith*).

The elytra are sparsely clothed with a dark pubescence, cinereous along the base, and slightly so along the sides. While it resembles *D. fastidiosus*, the present species may be known by the interrupted interocular carina, and by the sutural stria being deep and broadened at the apex.

### 14. Dromæolus tetricus.

Similar in form to *D. fastidiosus* (♂); antennæ scarcely serrate, piceous, the two basal joints paler: head densely punctate, vaguely longitudinally impressed, sparsely cinereo-pubescent, interocular carina distinctly elevated, curving downward along the side of the clypeus, this very narrow at the base, not carinate; thorax broader at the base than long, sides convergent to the apex, slightly sinuate in front of the hind angles, arcuate anteriorly, disc moderately convex, closely, moderately coarsely punctate, sparsely cinereo-pubescent; elytra flattened at the tip, vaguely striate at the base, sutural stria deepened at the apex, surface irregularly submuricately punctate, closely at the base, quite sparsely at the apex, sparsely pubescent, cinereous at the humeri; body beneath moderately coarsely and closely punctate, sparsely cinereo-pubescent; legs pale rufo-testaceous, femora slightly darker.
Length 2·5–3 millim.

*Hab.* GUATEMALA, Las Mercedes, Capetillo (*Champion*); PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

The smallest species at present known. The base of the propleural triangle is about as long as the inner side. In the female the sides of the thorax are a little less sinuate. The two or three basal joints of the antennæ are paler, but a little variable. The punctuation of the thorax also varies slightly in density.

### 15. Dromæolus fastidiosus.

*Dromæolus fastidiosus*, de Bonv. Mon. p. 226, t. 9. fig. 6 (♀), t. 10. fig. 1 (♂)[1].
*Tachycnemis Delauneyi*, Fleut. & Sallé, Ann. Soc. Ent. Fr. 1889, p. 406, t. 7. fig. 12[2].

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Cayenne[1]; ANTILLES, Guadaloupe[2].

A small species which seems to be related to *Thambus* and *Deltometopus*. It has the style of elytral sculpture of the former in both sexes, while the male thorax is very like that of a *Thambus*. The antennal grooves being decidedly wider behind suggest *Deltometopus*.

I have examined the type of *Tachycnemis delauneyi*; it is inseparable from *D. fastidiosus*, de Bonv.

## DIACERUS.

*Diacerus*, de Bonvouloir, Mon. des Eucnémides, p. 189 (1870).

This genus at present contains but two species, and while closely related to *Dromæolus*, it may be known by the second and third joints of the antennæ being very small and equal.

### 1. Diacerus antennatus.

*Diacerus antennatus*, de Bonv. Mon. p. 190, t. 8. fig. 1[1].

*Hab.* MEXICO, Toxpam, Cordova (*Sallé*[1]); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).

In this species the antennæ are a little longer than half the body, and rather strongly serrate from the fourth joint.

### 2. Diacerus grisescens.

*Diacerus grisescens*, de Bonv. Mon. p. 191, t. 8. fig. 2[1].

*Hab.* Mexico, Toxpam, Cordova (*Sallé*[1]), Chilpancingo in Guerrero (*H. H. Smith*); Guatemala, Sabo and Panima in Vera Paz, Capetillo (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

The antennæ are shorter than half the body, stouter than in *D. antennatus*, and not serrate. *D. grisescens* is without any doubt the female of the preceding species, though here numbered as distinct.

## PHÆNOBOLUS.

**Form** cylindrical, convex, scarcely narrower behind; antennæ a little longer (♂) or shorter (♀) than half the body, first joint as long as the next three, not stout nor carinate in front, second joint small, third nearly half as long as the first, joints four to ten equal in length, longer than wide (♂) or nearly square (♀), eleventh longer; clypeus sinuate each side of the apex, slightly notched at the middle, base rather broad, but a little narrower than the distance to the eye; interocular carina entire, feebly elevated on the base of the clypeus; antennal grooves very deep, continued on the head and not narrowed by the eye, broader in front than behind, more than half as wide as the triangle of the propleuræ, this longer than wide at the base, the apex not attaining the front edge of the prosternum; posterior coxal plates not twice as wide at the widest part as at the outer end; tibiæ slightly broader at the apex, especially the anterior pair; first joint of the hind tarsus not so long as the following joints together, the fourth joint distinctly excavate-emarginate; claws slightly broadened, but not toothed at the base.

The species for which this new name has been suggested responds so closely to the characters given for *Anabolus* that there seems to be no essential difference, except that of the penultimate tarsal joint. It is probable, however, that other characters will be found on comparison.

### 1. Phænobolus bicolor. (Tab. X. fig. 13.)

Cylindrical, convex, scarcely narrowed posteriorly, piceous-black, subopaque, thorax orange-red and faintly pubescent; antennæ piceous: head piceous, shining, coarsely, not closely punctate, a slight concavity near the base of the clypeus, this roughly punctate; thorax distinctly longer than wide, sides straight and parallel, feebly arcuately narrowed at the apical third, disc regularly convex, a moderately deep oval depression each side of the middle at the base, lateral margin distinctly double near the front angle, surface densely granulately punctate; elytra with parallel sides, arcuately narrowed at the apical third, distinctly striate, striæ entire, intervals punctate-scabrous, subgranular at the base; beneath piceous, shining, abdomen closely punctate, finely pubescent; legs piceous, tarsi ferruginous.

Length 4–7 millim.

*Hab.* Nicaragua, Chontales (*Belt*); Panama, Bugaba, San Lorenzo (*Champion*).

In form this insect is not unlike some *Microrhagi* from the same region, but its generic characters are so well marked as to make it easily recognized.

## EURACHIS.

Oblong, parallel, moderately convex; eyes moderate, not narrowing the antennal groove on the head; antennæ as long as half the body, much flattened, broader externally, first joint nearly as long as the next three, second small, third longer than the fourth, joints 4–10 nearly equal in length, 3–10 rather strongly but not

acutely serrate, eleventh joint longer, obliquely emarginate; thorax with a single sharply-defined marginal line which limits the antennal groove externally, the latter deep and smooth, rather broad, of equal width, more than half the width of the propleural triangle, this longer than wide at the base, but not sharply limited internally; prosternal sutures well marked; metasternal episterna moderate in width, slightly narrowed near the front; posterior coxal plates broadly dilated internally, but not narrow externally; last ventral segment prolonged in a point as in *Nematodes*; legs rather slender but not long; hind tarsi much longer than the tibiæ, the first joint not so long as the following joints together, fourth joint small, excavate-emarginate; claws broadly toothed at the base.

This genus shows affinities in several directions. By the system of de Bonvouloir it is related in its more important characters to the genera allied to *Dromæolus*, but differs from all of them in not having the antennal groove sharply limited on its inner border. The structure of the last ventral segment suggests the genera allied to *Nematodes*, while the antennæ are of a form not known to me elsewhere in the family.

### 1. **Eurachis elegans.** (Tab. X. fig. 14.)

Elongate, punctate, depressed-cylindrical; antennæ black, nearly as long as half the body; head densely coarsely punctured, fulvo-pubescent, orange-red, with a large frontal space reaching the occiput piceous, front convex, a faint median impression anteriorly which extends on the clypeus, this broadly arcuate in front, its base wider than half the distance to the eye; thorax wider at the base than long, sides at the posterior two-thirds slightly sinuous, convergent in front, anterior third arcuately narrowed, disc convex, the basal declivity rather flat, a short smooth median line near the base, a slightly transverse concavity each side of the centre of the disc, surface densely subrugosely punctate, clothed with conspicuous silken fulvous pubescence, darker in colour along a broad median line, colour of the surface orange-red, a large piceous space of somewhat triangular form with the base in front joined by a broad band to a piceous space transversely placed at the base, at each hind angle a triangular piceous space; elytra parallel, narrowed at the apical third, finely striate, intervals slightly convex, closely finely punctured, the punctures forming short transverse strigæ, colour paler orange, the suture, apex, and sides piceous, the latter gradually more widely from the humerus to the apex; prothorax beneath orange-yellow, prosternum closely finely punctate, fulvo-pubescent, intercoxal prolongation elongate-triangular; body beneath and abdomen piceous-black, moderately shining, abdomen very finely, not densely punctate, finely pubescent; legs piceous, tarsi ferruginous.

Length 8·5 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

The appearance of this insect is quite unlike that of the Eucnemidæ generally, although the form is not strikingly different from that of *Arrhipis*.

## FORNAX.

*Fornax*, Castelnau, in Silberm. Rev. Ent. iii. p. 172 (1835); de Bonvouloir, Mon. des Eucnémides, p. 295.

*Isarthrus*, Leconte, Proc. Acad. Phil. vi. p. 48.

*Onychodon*, Newman, Ent. Mag. v. p. 384.

This genus from its magnitude as well as its organization, is the central figure of the family, and while containing nearly one hundred species, is more homogeneous in facies and organization than usual in genera with such numerous representatives. There is, however, a tendency to approach *Plesiofornax* through those species in which the fourth

joint of the antennæ is small, as will be seen in the less sharply limited inner border of the antennal groove.

Owing to the relatively large number of species added to the Central-American fauna, the following Table has been prepared to assist in their identification :—

1. Second joint of the antennæ shorter than the fourth; inner border of the antennal groove very sharply defined . . . . . 2.
   Second joint of the antennæ equal to or longer than the fourth; inner border of the antennal groove not sharply defined . . . . . 9.
2. Epipleuræ punctate and not sulcate . . . . . 3.
   Epipleuræ smooth, grooved their entire length . . . . . 8.
3. Species bicoloured or ornate . . . . . 4.
   Species uniform in colour . . . . . 5.
4. Elytra piceous-black.
   Head, thorax, and greater part of the underside orange-yellow; mesopleuræ smooth in front . . . . . *atripennis.*
   Head and thorax orange-yellow, the latter with a median stripe and narrow lateral border black; mesopleuræ punctate . . . . *notabilis.*
   Elytra with two oblong ferruginous spots on each.
   Thorax ferruginous, with broad median and lateral piceous stripes . *variipennis.*
5. Pronotum rugosely sculptured, the intervals between the punctures more or less elevated . . . . . 6.
   Pronotum simply punctate, the intervals between the punctures smooth. 7.
6. Intercoxal process of the prosternum parallel-sided . . . . . *infrequens.*
   Intercoxal process of the prosternum more or less convergent to the apex . . . . . *affinis.*
7. Thorax closely punctate; above uniformly coloured.
   Elytra parallel in their basal half . . . . . *confusus.*
   Elytra gradually attenuate from the base to the apex . . . . . *petitii.*
   Thorax sparsely punctate on the disc and posteriorly; thorax piceous; elytra castaneous; last ventral segment with a central perforation (sexual?) . . . . . *castaneipennis.*
8. Last ventral segment acutely oval at the tip.
   Antennal groove not half as wide as the propleural triangle.
   Pronotum simply punctate, not rugose . . . . . *mendax.*
   Pronotum punctate and rugose, more especially when viewed from behind . . . . . *obrutus.*
   Antennal groove nearly as wide as the propleural triangle . . . *sceleratus.*
   Last ventral segment sinuate on each side and acutely prolonged; mesopleuræ quite smooth in front . . . . . *truncatus.*
9. Interocular carina more or less interrupted at the middle . . . . 10.
   Interocular carina continuous across the clypeus; clypeus usually with a median carina, this sometimes rather short or absent . . . *adjectus.*
10. Head with sharply-defined carina at the middle . . . . . *carinifrons.*
    Head not carinate . . . . . *insitus.*

### 1. **Fornax atripennis.** (Tab. X. fig. 15.)

Oblong, cylindrical, feebly convex, orange-yellow, antennæ, elytra, abdomen, and tibiæ black, clothed with pubescence the colour of the surface, feebly shining: antennæ longer than the thorax, second joint very small, third half as long as the first, fourth but little shorter, the following joints very slightly longer; head convex, densely punctate, front not carinate, interocular ridge not elevated, clypeus more than half as wide at the base as the distance to the eye, surface fulvo-pubescent; thorax wider at the base than long, sides nearly parallel posteriorly, arcuately narrowed in front, lateral margin very indistinctly double, disc convex, a slight oblique impression each side of the middle of the base, between which is a slight convexity, surface very densely punctate, scarcely rugose, subopaque, fulvo-pubescent; elytra finely striate, intervals flat, the entire surface closely but not roughly submuricately punctate; epipleuræ concave near the base and smoother; prosternum beneath very finely closely punctate, the apical process acute at the tip; antennal groove deep, smooth, sharply defined, parallel; abdomen finely, not densely punctate; last ventral segment rounded at the tip; femora ferruginous-yellow, tibiæ usually piceous, except sometimes the anterior pair, tarsi piceous, last two joints rufo-testaceous.

Length 9–11 millim.

*Hab.* GUATEMALA, Zapote (*Champion*); PANAMA, Bugaba (*Champion*).

The number of bicoloured species is small, and from all of them this one is easily known by its arrangement of colours.

### 2. **Fornax notabilis.**

*Fornax notabilis,* de Bonv. Mon. p. 423 [1].

*Hab.* MEXICO [1], Cordova (*Sallé*).

The thorax is orange-red, with the sides narrowly black, and a median black stripe broader in front. The elytra are piceous-black.

### 3. **Fornax variipennis.**

*Fornax variipennis,* de Bonv. Mon. p. 421, t. 21. fig. 4 [1].

*Hab.* MEXICO, Teapa (*coll. Chevrolat* [1]); GUATEMALA, Senahu in Vera Paz (*Champion*); PANAMA, Bugaba (*Champion*).—BRAZIL [1].

Easily known by the coloration. The thorax has on each side of the middle a paler space extending from the base to the apex, and on each elytron are two oblong-oval spots of similar colour.

### 4. **Fornax infrequens.**

*Fornax infrequens,* de Bonv. Mon. p. 371, t. 18. fig. 1 [1].

*Fornax guadeloupensis,* Fleut. & Sallé, Ann. Soc. Ent. Fr. 1889, p. 405, t. 7. fig. 11 [2].

*Hab.* MEXICO [1]; PANAMA, Bugaba (*Champion*).—ANTILLES, Guadaloupe [2].

A large species closely related to *F. affinis.* It has not been certainly identified in our series, although a rather small specimen (7 millim.) from Bugaba seems to belong here.

I have examined the type of *F. guadeloupensis*; it does not differ from *F. infrequens,* de Bonv.

### 5. **Fornax affinis.**

*Fornax affinis*, de Bonv. Mon. p. 386, t. 19. fig. 1[1].

*Hab.* MEXICO, Orizaba [1], Toxpam [1], Cordova [1] (*Sallé*); GUATEMALA, Coatepeque, Cerro Zunil, San Isidro (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Variable in size (8–17 millim.) and somewhat in colour. The typical specimens from the Sallé collection are paler than others more recently collected, probably from their age.

### 6. **Fornax confusus.**

*Fornax confusus*, de Bonv. Mon. p. 383, t. 18. fig. 8[1].

*Hab.* MEXICO [1].

Very closely related to *F. petiti*, but has not been identified in our series.

### 7. **Fornax petiti.**

*Fornax Petitii*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 183[1]; de Bonv. Mon. p. 382[2].

*Hab.* MEXICO [1 2].

Has not been identified by me.

### 8. **Fornax castaneipennis.**

Oblong, moderately convex, hind angles of the thorax and elytra castaneous, surface moderately shining, sparsely clothed with fulvous pubescence: antennæ slender, longer than the thorax, pale ferruginous, first joint darker, second small, half as long as the fourth, which is slightly longer than the fifth; head convex, coarsely and moderately closely punctate, interocular carina not extending on the base of the clypeus, this broad at the base, slightly wider than the distance to the eye; thorax broader at the base than long, sides arcuately narrowing to the front, lateral margin distinctly doubled, disc regularly convex, a slight depression each side of the middle of the base, these united by a transverse impression, punctuation moderately coarse, but not rugose, along the sides, much finer in front and along the middle, especially near the base; elytra parallel at the basal third, then narrowed to the apex, finely striate, intervals slightly convex, moderately closely punctate, slightly transversely wrinkled at the base; prosternum moderately coarsely and closely punctate, shining, the apex acutely triangular, scarcely impressed at its base; abdomen more closely punctate, fulvo-pubescent; legs ferruginous.

Length 7 millim.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

The unique example before me has the last ventral segment quite coarsely punctate at the apex, and near the base a very deep fovea as if made by the perforation of a pin 0·2 millim. in thickness. While this species is apparently related to *F. petiti* and *F. confusus*, it differs from both by the fine and sparse punctuation of the middle of the thorax. As the specimen is a female, the ventral fovea may be a sexual character.

### 9. **Fornax mendax.**

*Fornax mendax*, de Bonv. Mon. p. 393, t. 19. fig. 7 [1].

*Hab.* MEXICO [1], Cordova (*Sallé*); GUATEMALA, Zapote (*Champion*); NICARAGUA (*Sallé*) Chontales (*Belt*).

A large species resembling *F. affinis*, but with smooth grooved epipleuræ.

### 10. **Fornax obrutus.**

*Fornax obrutus*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 183 [1]; de Bonv. Mon. p. 395, t. 19. fig. 8 [2].

*Hab.* MEXICO, Orizaba (*coll. Chevrolat* [1 2]); GUATEMALA, Zapote (*Champion*); PANAMA, Bugaba (*Champion*).

The thorax is simply punctate and not roughly sculptured, while in its other characters the species is close to *F. mendax*.

### 11. **Fornax sceleratus.**

Oblong, rather narrow, subcylindrical, moderately convex, brownish, feebly shining, sparsely clothed with fulvo-cinereous pubescence: antennæ slender, as long as half the body, ferruginous, second joint very small, third two-thirds as long as the first, fourth shorter, this to the eleventh gradually longer; head convex, coarsely, densely, and somewhat roughly punctured, interocular carina feebly elevated, not extending on the base of the clypeus, the latter as wide as the distance to the eye; thorax broader at the base than long, sides arcuately narrowed from the base to the apex, lateral margin doubled in front, disc convex, densely punctate and subopaque, the punctures simple posteriorly, but rough at the apex and sides, a short smooth line at the middle near the base; elytra very little narrowed at the apex, striate, intervals flat, sparsely punctate, especially posteriorly, not dense at the base, and slightly asperate near the humeri only; epipleuræ smooth, and grooved their entire length; prosternum densely punctate, the apex grooved between the coxæ and acute at the tip; antennal grooves broad and deep, nearly as wide as the propleural triangle, not wider in front; mesopleuræ sparsely punctate over the entire surface; abdomen sparsely punctate, the last segment rough at the apex; legs ferruginous, the first joint of the hind tarsi scarcely as long as the following joints united.

Length 6·5 millim.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

Closely related to *F. mendax* and *F. obrutus*, but narrower than either, and with much wider antennal groove. It seems to connect *Fornax* with *Diphytaxis*.

### 12. **Fornax truncatus.** (Tab. X. fig. 16.)

Oblong, cylindrical, very obtuse in front, piceous-brown, feebly shining, sparsely cinereo-pubescent: antennæ nearly twice as long as the thorax, slender, second joint very small, third about half as long as the first, joints 4–6 gradually a little shorter, 7–11 gradually longer; head moderately convex, densely coarsely punctured, interocular carina scarcely elevated, broadly interrupted at the base of the clypeus, which is slightly wider than the distance to the eye; thorax subquadrate, broader than long, sides straight and parallel, rounded only at the front angles, lateral margin double, the two edges sharp but very close, disc very convex, surface opaque, granulate moderately closely in front, but on the basal declivity rather sparsely punctate; elytra striate, intervals comparatively finely punctate, not closely, and gradually more sparsely towards the apex, humeral region slightly asperate; prosternum not closely punctate, broadly grooved between the coxæ, apex acute; antennal grooves deep, wider just at the apex; mesopleuræ in great part smooth, sparsely punctate posteriorly; abdomen sparsely finely punctate, the last segment

sinuate on each side and prolonged in an obtuse point, the surface subgranulate near the apex; epipleuræ grooved their entire length and smooth; legs ferruginous.

Length 9–13 millim.

*Hab.* NICARAGUA, Chontales (*Janson, Belt*).

This species presents an extraordinary assemblage of characters and a peculiar facies. It seems to be allied to *F. gibbosus*, but easily known from it by the form of the last ventral segment. A similar structure is described in *F. ventralis*, but this insect has flat epipleuræ.

### 13. **Fornax adjectus.**

Cylindrical, moderately convex, narrowed behind, brown, feebly shining, finely fulvo-pubescent: antennæ longer than the thorax, filiform, first joint nearly as long as the next four, second distinctly longer than the fourth, the latter shorter than the fifth, joints 5–10 gradually longer, eleventh one half longer than the tenth; head convex, densely punctate, subrugose, not carinate, interocular ridge well marked, continuous in an arcuate manner across the base of the clypeus, this about half as wide at the base as the distance to the eye, more or less carinate along the median line; thorax broader at the base than long, sides arcuately narrowed to the front, lateral margin single, disc convex, a very faint longitudinal impression near the base, surface very densely punctate, subopaque, but not asperate; elytra narrowed towards the apex, nearly from the base, striate, intervals closely punctate, slightly asperate near the base; prothorax beneath densely punctate, apex of the prosternum very acute, antennal groove deep, broader behind, punctured along its inner border, where it is not as sharply limited as usual in this genus; abdomen very densely punctured at the apex, more sparsely in front; legs ferruginous.

Length 7–9 millim.

*Hab.* GUATEMALA, Capetillo, Sinanja in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

In many of its characters this species resembles *F. lacerda*, but there is no frontal carina, and the antennal grooves are distinctly broader behind. The outer edge of the propleural triangle is not so sharply defined as usual in the genus. Some specimens, by a peculiar arrangement of the punctuation, seem to have a very short frontal carina. The carination of the clypeus may be nearly entire or visible at the base only.

### 14. **Fornax carinifrons.**

Oblong, moderately convex, narrower posteriorly, brownish-piceous, slightly shining, sparsely, finely fulvo-pubescent: antennæ longer than the thorax, slender, ferruginous, first joint darker, second much longer than the fourth, which is short, but little longer than wide, outer joints gradually longer; head convex, densely, subrugosely punctate, with a well-defined carina beginning at the vertex, but not reaching the base of the clypeus, interocular carina interrupted, but extending slightly on the base of the clypeus, this narrower at the base than half the distance to the eyes; thorax wider at the base than long, sides parallel for a short distance, then arcuately narrowed to the apex, lateral margin distinctly double in front, disc regularly convex, surface densely punctate, slightly rugose at the sides, median line not impressed nor carinate; elytra striate, moderately closely punctate, rugose and transversely wrinkled at the base only; prosternum finely, not densely punctate, the apical prolongation impressed between the coxæ, arcuately narrowed to the apex; antennal groove not sharply limited on the inner side; abdomen closely finely punctate, fulvo-pubescent, the last segment slightly elevated at the middle of the apex and acute; claws slightly broader at the base, but not toothed.

Length 6–9 millim.

*Hab.* MEXICO, Jalapa (*Höge*); GUATEMALA, Panzos and Teleman in Vera Paz (*Champion*).

This is one of the species, not by any means unique in the family, in which there is difficulty in assigning a generic place. The entire facies is that of *Fornax*, while the feebly limited antennal grooves suggest *Plesiofornax*. It is, however, best retained here, and doubtless resembles *F. sinuatus*.

### 15. **Fornax insitus.**

Closely related to *F. adjectus*, and differing very little in the superficial characters, except as follows:—Front not carinate; interocular carina feebly elevated, not extending on the base of the clypeus, this about half as wide at the base as the distance to the eye; antennal groove deep, slightly punctured along its inner edge, distinctly wider behind, but less than half as wide as the base of the propleural triangle opposite that point; last ventral segment slightly compresso-carinate at the apex.

Length 7–8 millim.

*Hab.* PANAMA, Bugaba (*Champion*).

By the scheme of de Bonvouloir this species is related to *F. badius* and *F. additus*, but differs from both in its narrower clypeus at the base and by the antennal grooves being wider behind.

## CLADUS.

*Cladus*, de Bonvouloir, Mon. des Eucnémides, p. 432 (1870).

This genus belongs to the *Fornax* series, having a well-developed and defined antennal groove, which is narrowed on the head by the large eyes. The prosternum in front of the coxæ is broadly flattened, even slightly concave, the apical portion (as seen from below) abruptly elevated, carinate at the middle, and prolonged in an obtuse point.

The most curious character is that presented by the mouth, which is not only unique in the family but in the entire Coleopterous series. Of this de Bonvouloir makes the following note:—"The parts of the mouth seem to be terminated by long stems, slender and branching. Unhappily, the few examples before me have but fragments of these parts, and render it impossible for me to say if they are palpi or appendices of the maxillæ."

The appearance of the mouth beneath is as if the insect had grasped a small bunch of pale moss or rootlets.

The mentum is semicircular in outline, deeply emarginate, the emargination partly filled with a membranous partition; at the angle of the mentum is an oval appendage, from the lower face of which arises a long ribbon-like extension, fimbriate on its margins and pubescent on both sides. The labial palpi are modified out of all resemblance to organs of that character. They seem to arise at the emargination of the mentum, and assume an arborescent appearance by dividing into four stems, of which the innermost and third are again bifurcate, and the second and fourth simple. From these stems shorter branches are given off on each side alternately, each branch ciliate at the tip.

The maxillæ are bilobed, the outer lobe longer, in shape much like a boomerang,

very thin, ciliate on its edges and sparsely hairy on its flat sides; the inner lobe is shorter, ribbon-like, slender at the base, and apparently not ciliate. In lieu of palpi the maxillæ have, arising at their base, two simple stems like those of the mentum.

The entire structure, when dry, is extremely delicate and fragile, the ribbon-like appendage of the mentum much contorted, but when placed in water the stems become swollen, and the appearance then is much like a spongy mass. It is therefore extremely difficult to realize the exact structure from these two causes; but the accompanying figure will give a fair idea of it. The figure represents the left side of the mentum as seen from below, the maxilla removed from that side. The maxilla is that of the right side in its normal position, the half of the mentum removed in front, although in nature the palpar organs are turned more outwardly.



The mandible presents nothing unusual. It is stout, truncate at the tip, the lower edge prolonged in a lamina which partly covers the delicate parts beneath.

When the head is deflexed the mouth-parts rest in the concavity of the prosternum, which is smooth at the middle and finely pubescent at the sides.

While I do not maintain that the sketch is perfectly accurate in all details, it certainly fairly represents what I have been able to make out, and should any one be fortunate enough to possess the material to repeat the experiment of elucidating this complex arrangement he will be very willing to excuse any defects of this attempt.

### 1. Cladus maxillaris.

*Cladus maxillaris*, de Bonv. Mon. p. 433, t. 21. fig. 9[1].

*Hab.* Mexico, Teapa (*coll. Chevrolat*[1]); Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).—Guiana, Cayenne[1].

The facies of this insect is almost exactly that of *Fornax affinis*.

De Bouvouloir remarks that either the first or last of these localities is probably incorrect. As our localities are intermediate it is probable that both are correct.

## PLESIOFORNAX.

*Plesiofornax*, de Bonvouloir, Mon. des Eucnémides, p. 460 (1870).

As the name indicates, this genus is very close to *Fornax*. The essential difference between the two is found in the propleural structure, *Fornax* having the antennal groove more or less sharply limited internally by the edge of the propleural triangle, while in the present genus no such character is evident, and the groove is indicated by a smooth depression, which may itself be very indistinct. As a general rule the claws

are toothed in *Fornax* and simple in *Plesiofornax*, and the first joint of the hind tarsus is elongate in the former or less long than the following joints in the latter; but exceptions, few in number, occur in both characters in the two genera. In those species which approach *Fornax* most nearly (*P. elongatus* and *P. puellus*), the first hind tarsal joint is long, and, as if in compensation, the claw-joint short. Two species have been observed to differ in the form of the last ventral segment in the two sexes (*P. puellus* and *P. sublucidus*), while a third (*P. glandifer*) has a pubescent fovea in the propleural triangle which may be peculiar to the female.

The great increase in the number of species renders the table given by de Bonvouloir entirely insufficient, there being now more known from the Central-American fauna than are contained in his monograph.

The following Table is presented as a brief synopsis of the Central-American species at present known:—

Third joint of the antennæ much longer than either the second or fourth . 2.
Third joint of the antennæ scarcely longer than the second and shorter than the fourth . . . . . 8.

2. Antennal groove indistinct, punctured similarly to the propleural triangle . . . . . 3.
   Antennal groove distinct, smooth and shining in its entire length . 4.

3. Propleural region densely punctured and subopaque . . . . . *pectoralis*.
   Propleural region not densely punctate, more or less shining.
      Interocular ridge feebly elevated, broadly interrupted; punctures of the propleuræ closer than their own diameters . . . *ligniperda*.
      Interocular ridge distinctly elevated, narrowly interrupted; punctures of the propleuræ more distant . . . . . *paganus*.

4. Fourth joint of the antennæ more than half as long as the fifth and longer than wide . . . . . 5.
   Fourth joint of the antennæ scarcely longer than wide, and not half as long as the fifth . . . . . 11.

5. Interocular ridge interrupted; species usually piceous . . . . . 6.
   Interocular ridge entire, well elevated; species ferruginous . . . 9.

6. First joint of the hind tarsus not longer than the others combined, usually shorter; claw-joint long and slender, the claws simple . 7.
   First joint of the hind tarsus distinctly longer than the others combined; claw-joint short, claws toothed or dilated at the base . . . 10.

7. Clypeus nearly as wide at the base as the distance to the eyes.
      Thorax densely punctured . . . . . *confœderatus*.
      Thorax not densely punctured, intervals smooth . . . . . *mandibularis*.
   Clypeus much narrower at the base than the distance to the eyes.
      Interocular ridge scarcely elevated, broadly interrupted at the base of the clypeus; antennæ very long (♂); elytra obsoletely or not striate . . . . . *longicornis*.

Interocular ridge distinctly elevated, nearly entire; elytra very distinctly striate.

Propleural triangle punctate along the inner border only; thorax not very coarsely punctate . . . . . *inutilis.*

Propleural triangle distinctly punctate; thorax coarsely and closely punctate (a pubescent fovea at the apex of the propleural triangle ♀, sexual?) . . . . . *glandifer.*

8. Thorax densely punctate, species opaque; first joint of the hind tarsus shorter than the following joints together . . . . . *opaculus.*

9. Thorax densely punctate, propleural triangle also; first joint of the hind tarsus longer than the following joints together.

Second joint of the antennæ very short, less than half as long as the fourth . . . . . *imperitus.*

Second joint of the antennæ in its entire length but little shorter than the fourth . . . . . *badius.*

10. Thorax densely punctate and subopaque; propleural triangle densely punctate.

Claws broadly toothed at the base; form slender . . . . . *elongatus.*

Claws broader but not toothed; form subcylindrical . . . . *puellus.*

11. Antennæ not greatly different in length in the sexes; last ventral segment entire ♂, or emarginate ♀ . . . . . *sublucidus.*

## 1. Plesiofornax pectoralis.

Oblong, moderately convex, piceous, slightly shining, sparsely clothed with short fulvous pubescence: antennæ ferruginous, half (♀) or three fourths (♂) the length of the body, slender, joint two very small, third with second nearly as long as the first, fourth more than half as long as the third, third to the eleventh gradually longer; head convex, closely, not roughly punctate, slightly flattened near the clypeus, with a faint longitudinal impression, which extends faintly on the clypeus, this very narrow at the base, less than half the distance to the eye, interocular ridge not elevated; thorax wider at the base than long, arcuately narrowed to the front, disc convex, a slight punctiform impression each side of the middle of the base, a vague oblique impression each side and a slight median impression near the base, surface closely simply punctate; elytra parallel for a short distance near the base, then narrowed to the apex, finely striate, intervals rather sparsely and much more finely punctate than the thorax; prosternum sparsely punctate, propleural triangle very densely punctate even to the thoracic margin; abdomen more coarsely punctate near the base, more finely and densely towards the apex; legs piceous, first joint of the hind tarsus shorter than the others together, claws simple.

Length 7·5–11·5 millim.

*Hab.* Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The female is of more robust form, and has the frontal impression indistinct, and the antennæ shorter and stouter.

## 2. Plesiofornax ligniperda.

*Plesiofornax ligniperda*, de Bonv. Mon. p. 462, t. 22. fig. 8[1].

*Hab.* Mexico, Cordova, Toxpam (*Sallé*[1]).—Guiana, Cayenne[1].

Similar to the preceding, but the propleuræ are less densely punctate and more shining. The legs are ferruginous and the entire surface is more decidedly punctate.

### 3. **Plesiofornax paganus.**

Oblong, piceous-brown, moderately shining, sparsely clothed with short semi-erect fulvous pubescence: antennæ ferruginous, formed as in *P. pectoralis*, but a little shorter in both sexes; head convex, coarsely and densely punctate, especially in front, impressed at the base of the clypeus, interocular carina well elevated, narrowly interrupted at the base of the clypeus, this narrow, less than half the distance to the eye; thorax broader than long, sides nearly straight, convergent to the apex, arcuate near the front angles, disc moderately convex, a punctiform impression each side of the middle of the base, where there is a vague triangular flattening enclosing a short smooth line, surface coarsely, rather closely punctate, not rugose; elytra as in *P. pectoralis*, not closely punctate; propleural triangle coarsely punctate, punctures at least as distant as their own diameters and continuing to the margin of the thorax; legs ferruginous, femora paler, first joint of the hind tarsus shorter than the others united, claws simple.

Length 7·5–10·5 millim.

*Hab.* GUATEMALA, El Tumbador 2500 feet (*Champion*).

Differs from either of the preceding species in having the interocular carina nearly entire.

### 4. **Plesiofornax confœderatus.**

*Plesiofornax confœderatus*, de Bonv. Mon. p. 472, t. 23. fig. 4[1].

*Hab.* MEXICO, Cordova (*Sallé* [1]).

### 5. **Plesiofornax mandibularis.**

*Plesiofornax mandibularis*, de Bonv. Mon. p. 474, t. 23. fig. 5[1].

*Hab.* MEXICO, Cordova (*Sallé* [1]).

De Bonvouloir separates these two species on the form of the mandibles, the rugose face being in the former narrow and in the present broad; but with the types before me this seems entirely illusory. They do differ in the punctuation of the thorax—in the present species less dense with smooth intervals, and in *P. confœderatus* dense and crowded.

### 6. **Plesiofornax longicornis.**

Oblong, piceo-castaneous, shining, sparsely clothed with fulvous pubescence: antennæ (♂) more than three fourths the length of the body, slender, ferruginous, formed as in *P. pectoralis*, the third joint longer than the fourth; head convex, coarsely punctate, densely anteriorly, less closely posteriorly, interocular carina distinct but not entire, clypeus at the base half as wide as the distance to the eye; thorax wider than long, sides feebly arcuately narrowing from the base to the apex, disc convex, rather sparsely and finely punctate; elytra obsoletely or not at all striate, finely and not closely punctate; propleural triangle finely, not closely punctate, the antennal groove deep and smooth; entire body beneath rather finely, not closely punctate; legs ferruginous, first joint of the hind tarsus not so long as the others united, claw-joint slender and long, claws simple.

Length 12 millim.

*Hab.* PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

While not notably different in form, this species differs from all those with long antennæ by the almost complete obliteration of the elytral striæ. Two males have been seen.

### 7. **Plesiofornax inutilis.**

Oblong, piceous-black, shining, scarcely pubescent: antennæ slender, ferruginous, a little longer than half the body (♂), formed as in *P. pectoralis*; head convex, closely coarsely punctate, a triangular depression in front, the interocular ridge well elevated, nearly entire, merely slightly notched at the base of the clypeus, which is less than half as wide as the distance to the eye; thorax wider at the base than long, sides arcuately narrowing to the front, disc moderately convex, punctuation moderately coarse, but with smooth intervals; elytra striate, intervals flat, much more finely punctate than the thorax and not closely; propleural triangle punctate at the inner side and base, the larger part of its area smooth; body beneath piceous, the margins of the ventral segments paler; abdomen rather closely punctate; legs ferruginous, first joint of the hind tarsus shorter than the others together, last joint long and slender, claws simple.
Length 7–8 millim.

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba (*Champion*).

This species might be taken for a small *P. pectoralis*; but the punctuation of the thorax beneath will readily separate it.

### 8. **Plesiofornax glandifer.**

Oblong, moderately robust and convex (♀), piceous, slightly shining, very sparsely pubescent: antennæ ferruginous, not as long as half the body, the joints having the same relative length as in *P. pectoralis*, but shorter; head convex, coarsely and closely punctate, a slight concavity near the clypeus, interocular carina well elevated, not extending across the clypeus, but continued by a smooth line, clypeus narrower at the base than half the distance to the eye; thorax broader at the base than long, sides arcuately narrowed from the hind angles to the front, disc convex, a slightly elevated, short, median smooth line posteriorly, surface coarsely and closely punctate; elytra faintly striate, the intervals much more finely punctate than the thorax and rather sparsely, sides parallel, narrowed at the apical third; propleural triangle punctate sparsely over its entire surface, and with a large oval pubescent fovea in the front angle; body beneath brown, abdomen rather closely punctate; legs brown, first joint of the hind tarsus shorter than the others together, the claw-joint slender and long, claws simple.
Length 10 millim.

*Hab.* PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

It is possible that the propleural fovea is sexual. One female specimen seen.

### 9. **Plesiofornax opaculus.**

Oblong, moderately convex, piceous, opaque, sparsely clothed with short reddish-brown pubescence: antennæ slender, ferruginous, three fourths the length of the body (♂), first joint nearly as long as the next three, second small, third scarcely longer, joints 3–11 successively longer; head convex, front rather flat, densely subrugosely punctate, interocular carina finely elevated, broadly interrupted, clypeus nearly half as wide at the base as the distance to the eye; thorax much wider at the base than long, sides arcuately narrowing to the front, disc moderately convex, densely rugosely punctate; elytra gradually narrowed from the base, distinctly striate, intervals flat, densely submuricately punctate, with a tendency to form transverse strigæ; body beneath more shining than above, densely punctate; propleural triangle densely punctate, the antennal groove distinct but sparsely punctate; legs brownish, first joint of the hind tarsus not so long as the others together, the claw-joint long and slender, claws simple.
Length 7·5–9 millim.

*Hab.* PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This species is easily known by its opaque surface, and by the short third joint of the antennæ. Only males have been seen.

## 10. **Plesiofornax imperitus.**

Oblong, moderately convex, ferruginous or brown, subopaque, sparsely clothed with fulvous pubescence: antennæ slender, two-thirds as long as the body, second joint very short, less than half as long as the fourth, third and fifth equal, joints 4–11 increasing in length; head convex, densely rugosely punctate, interocular carina moderately elevated, continuous across the base of the clypeus, this less than half as wide as the distance to the eye; thorax wider than long, sides straight, slightly convergent, arcuate near the apex, disc moderately convex, a faint median impression near the base, surface densely, moderately coarsely punctate, not rugose; elytra striate, closely punctate, less coarsely than the thorax, slightly transversely wrinkled at the base; propleural triangle densely subrugosely punctate, the antennal groove shining but obsoletely punctate; abdomen densely finely punctate; legs paler, the first joint of the hind tarsus not so long as the others united, the claw-joint long and slender, claws simple.

Length 8–9·5 millim.

*Hab.* Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

An inconspicuous species allied to *P. badius* by its entire interocular carina, but differing especially in the form of the antennæ.

## 11. **Plesiofornax badius.**

Oblong, moderately convex, pale castaneous, subopaque, indistinctly fulvo-pubescent: antennæ slender, ferruginous, as long as half the body, the joints formed relatively as in *P. pectoralis*; head convex, a vague concavity anteriorly, densely rugosely punctate, interocular carina well marked, extending across the base of the clypeus, this less than half as wide as the distance to the eye; thorax wider than long, sides arcuately narrowing nearly from the hind angles, disc moderately convex, a short, smooth, median line posteriorly, surface densely not deeply punctate, somewhat rugose near the front angles; elytra narrowed nearly from the base, distinctly striate, intervals flat, submuricately punctate, sparsely near the apex, more closely near the base; body beneath a little paler than above, rather densely punctate; propleural triangle densely punctate, the groove smooth; legs ferruginous, the first joint of the hind tarsus scarcely so long as the other joints united, the claw-joint slender and long, claws simple.

Length 8 millim.

*Hab.* Panama, Bugaba (*Champion*).

In general appearance very like some of the species of *Fornax*, and by this as well as by the well-marked entire interocular carina it is known from all the preceding species.

## 12. **Plesiofornax elongatus.**

Elongate, subcylindrical, narrower posteriorly, ferruginous-brown, feebly shining, sparsely pubescent: antennæ slender, two-thirds as long as the body, the joints formed as in *P. pectoralis*; head convex, front slightly flattened, densely and subrugosely punctate, interocular carina moderately elevated, interrupted at the base of the clypeus, which is more than half as wide as the distance to the eye; thorax wider at the base than long, sides parallel for a short distance behind, then arcuately narrowed to the front, disc moderately convex, densely subrugosely punctate; elytra narrowed nearly from the base, striate, intervals flat, densely submuricately punctate and somewhat transversely wrinkled on the basal half; propleuræ densely, subrugosely punctate, the antennal groove narrow; abdomen densely and rather finely punctate; legs

paler ferruginous, first joint of the hind tarsus distinctly longer than the following joints together, the claw-joint short, claws broadly toothed at the base.
Length 6–8·5 millim.

*Hab.* GUATEMALA, Cerro Zunil (*Champion*).

This species is readily known by its elongate form, pale colour, and toothed claws. The last ventral segment of the male has the usual acutely oval form at the apex.

### 13. **Plesiofornax puellus.**

Oblong, subcylindrical, moderately convex, piceous-brown, subopaque, sparsely clothed with fulvous pubescence: antennæ ferruginous, half as long as the body and slender (♂), shorter and subserrate (♀), the joints having the same proportions as in *P. pectoralis*; head convex, densely subrugosely punctate, a short frontal carina, on each side of which is a vague depression, interocular carina not elevated, interrupted by the base of the clypeus, which is narrower than half the distance to the eye; thorax scarcely wider than long, sides parallel, arcuate at the apical third, disc moderately convex, a short oblique impression at each side of the middle of the base, between these a slight tuberosity, surface very densely punctate, slightly rugose at the sides; elytra striate, intervals closely submuricately punctate, somewhat transversely wrinkled near the base; propleuræ coarsely and deeply, not densely punctate; abdomen densely punctate; legs paler ferruginous, first joint of the hind tarsus as long as or slightly longer than the others together, claw-joint rather short, claws broader at the base but not rectangularly toothed.
Length 5·5–7 millim.

*Hab.* GUATEMALA, Volcan de Atitlan 2500 to 3000 feet (*Champion*).

The last ventral segment is obtusely oval at the tip in the male, truncate and broadly emarginate in the female. This insect might readily be mistaken for a *Fornax* of the *adjectus* series.

### 14. **Plesiofornax sublucidus.**

*Plesiofornax sublucidus*, de Bonv. Mon. p. 464, t. 22. fig. 9[1].

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt*, *Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—GUIANA, Cayenne[1]; AMAZONS, San Paulo[1], Ega[1].

At first glance the facies of this insect is very like that of many *Melanoti*. It differs from all the preceding species in having the fourth antennal joint short, scarcely longer than wide, and not longer than the second joint. In the males the antennæ are fully half the length of the body, in the females shorter. The male last ventral segment is of the usual oval form at the tip, while in the female the apex is emarginate, but variable in degree. This sexual difference seems to have escaped de Bonvouloir, although the figure by Migneaux faintly indicates it.

## DYSCOLOTAXIA.

Antennal grooves deep, sharply limited, nearly half as wide as the triangle of the propleuræ, distinctly narrowed by the eyes on the head. Antennæ slender, extending beyond the hind angles of the thorax; first joint as long as the next three, second small, partly concealed by the first, third distinctly longer, joints 4–7 nearly equal, broader than long, 8–10 slender, equal, each a little longer than 5–7 together, eleventh slightly longer. Triangle of the propleuræ with the outer side distinctly but not greatly longer

than the posterior side. Posterior coxal plates almost triangular. Tarsi slender, the fourth joint prolonged in a lobe, the first joint of the hind tarsus longer than the others together. Claws not toothed.

From these characters it will be seen that this genus is essentially a *Fornax* with the middle joints of the antennæ small and equal, and with simple claws. This seems to be the only instance among the genera with well-defined antennal grooves in which a number of the middle antennal joints are small and equal.

1. **Dyscolotaxia championi.** (Tab. X. figg. 17 ; 17 *a*, antenna.)

Oblong, moderately convex, narrower posteriorly, piceous-brown, subopaque, inconspicuously fulvo-pubescent: antennæ entirely ferruginous; head densely and roughly punctate, interocular ridge entire, clypeus arcuate in front, less than half as wide between the antennæ as long; thorax nearly as long as wide at the base, arcuately narrowed from the base to the apex, disc convex, a short median impression at the base, surface densely roughly punctate; elytra striate, intervals closely roughly punctate, less so than the thorax; body beneath densely punctate, abdomen pubescent; legs paler than the general colour.
Length 6 millim.

*Hab.* Panama, Bugaba (*Champion*).

This insect has quite the facies of several species of *Fornax* found in the same region. The generic characters will readily separate it.

## DIPHYTAXIS.

Form oblong, rather robust, narrower posteriorly. Eyes large, narrowing the antennal grooves. Antennæ longer than the thorax, dissimilar in the sexes; joints 3–10 bearing a long branch (♂) or serrate (♀). Clypeus arcuate at the middle in front, the base broader than the distance to the eye. Antennal grooves broad and deep, wider than the propleural triangle and not broadened in front (♂), or equal to the triangle and distinctly wider in front (♀). Base of the propleural triangle (very small in the male) longer than the inner side, the apex not reaching the edge of the prosternum. Metasternal episterna moderate, sides parallel. Posterior coxal plates broadly dilated, triangular. First hind tarsal joint not so long as the following joints united, the fourth excavate-emarginate. Claws broadly toothed at the base. Last ventral segment slightly prolonged.

*Male.* Antennæ with first joint stouter, arcuate, as long as the next four, second small, third very little longer than fourth; joints 4–10 subequal in length, these (with the third) bearing each a branch three times as long as the joint; eleventh joint nearly as long as four preceding joints. Propleural triangle small, the apex reaching only two-thirds to the margin of the prosternum.

*Female.* First two joints of the antennæ as in the male, third as long as the next two, joints 3–10 serrate, eleventh nearly as long as the two preceding. Propleural triangle twice the area of that of the male, the apex nearly reaching the margin of the prosternum.

This genus represents in our fauna *Hodocerus* of the Indian Archipelago, and differs notably in the structure of the antennæ, that genus having the second and third joints both small. There is probably no genus in the entire family in which the antennal grooves occupy so large a space on the propectus, unless it be *Macraulacus*, in which the entire surface is excavated. The striking difference in the antennæ in the sexes is remarkable in a genus so closely allied to *Fornax*.

### 1. **Diphytaxis excavata.** (Tab. X. figg. 18, antenna, ♀ ; 19 ♂ .)

Oblong, subcylindrical, moderately convex, narrowed at the apical third of the elytra, brown, feebly shining, sparsely clothed with short fulvous pubescence ; antennæ, except the first joint, paler : thorax broader than long, sides parallel for a short distance at the base, then arcuately narrowed to the apex, disc convex, a smooth median line extending from near the base to the middle, base on each side of the middle broadly but not deeply excavate, surface roughly (not coarsely) granulate ; elytra parallel, gradually narrowed at the apical half, distinctly striate, intervals slightly convex, closely moderately punctate, more densely and roughly at the base and for a distance along the sides ; body beneath somewhat paler than above, moderately closely punctate, more finely and sparsely on the abdomen, sparsely fulvo-pubescent ; legs ferruginous.

Length 9–12·5 millim.

*Hab.* GUATEMALA, Teleman, Cahabon, and Senahu in Vera Paz, El Reposo, San Isidro (*Champion*).

## HENECOSOMA.

Oblong, parallel, depressed, cylindrical. Antennæ half as long as the body, slightly broader externally, flattened, subserrate ; first joint as long as the next three, second small, third scarcely longer than the entire second and very little longer than the fourth, joints 4–11 gradually longer, eleventh narrower than the preceding. Clypeus arcuate at the apex, with an indistinct notch at the middle, narrower at the base than half the distance to the eye. Mandibles exposing a broad rugose face, the posterior edge slightly prolonged backward. Propleuræ without any trace whatever of an antennal groove, the lateral margin of the thorax single and entire. Metasternal episterna moderate in width, parallel. Posterior coxal plates widely dilated internally. Legs slender ; posterior tarsi longer than the tibiæ, the first joint longer than the following joints together, fourth small, excavate-emarginate ; claws simple. Last ventral segment acutely oval at the tip, but not prolonged ; last dorsal segment simple.

The characters given above define a genus which must be associated with the *Nematodes* series, from the important structural details, while the facies makes it as heterogeneous a member of the series as *Eurachis* is to its allies. By the scheme of de Bonvouloir the nearest possible ally is *Hypocœlus*, from which it differs in too much of importance to require mention here.

### 1. **Henecosoma discicolle.** (Tab. X. fig. 20.)

Very black, opaque, clothed with short black pubescence ; thorax with a broad orange-yellow stripe on each side, close to but not including the border, clothed with silken fulvous pubescence : head piceous or slightly brown, fulvo-pubescent, densely, subgranulately punctate, front longitudinally impressed anteriorly, the impression extending nearly the entire length of the clypeus, interocular ridge distinctly elevated, curved around the inner border of the antennal fossa ; thorax a little broader at the base than long, sides straight, slightly convergent, very slightly arcuate at the anterior angles, disc regularly convex, median line fine and smooth, surface densely finely punctate and finely rugose ; elytra parallel, narrowed at the apical third, finely striate, intervals flat, densely and finely submuricate ; body beneath black, less opaque than above ; mesosternum sometimes brownish ; abdomen densely finely punctate, indistinctly cinereo-pubescent ; legs black.

Length 6–8 millim.

*Hab.* GUATEMALA, Sinanja in Vera Paz (*Champion*) ; PANAMA, Bugaba (*Champion*).

The only male specimen is the smallest of the series, and has the thorax entirely orange-red. The species in form and colour resembles closely the North-American *Adelocera discoidea*, or even some of the members of the genus *Plateros*.

## EMATHION.

*Emathion,* Guérin, Ann. Soc. Ent. Fr. 1843, p. 178 (ex parte) ; de Bonvouloir, Mon. des Eucnémides, p. 637.

As restricted by de Bonvouloir, this genus differs from *Nematodes* in having the fourth tarsal joint simple and not excavate-emarginate.

### 1. Emathion anxius.

*Emathion anxius,* de Bonv. Mon. p. 640[1].

*Hab.* Mexico[1], Cordova (*Sallé*).—Guiana, Cayenne[1].

Although this species differs less in the form of the clypeus than asserted by de Bonvouloir, it may be known by the peculiar vestiture—a marmorate arrangement in small patches of golden and brown pubescence.

### 2. Emathion leprieuri.

*Galba Leprieuri,* Cast. in Silberm. Rev. Ent. iii. p. 174[1].
*Nematodes* (*Metabletus*) *Leprieuri,* Chevr. Ann. Soc. Ent. Fr. 1867, p. 595[2].
*Emathion Leprieuri,* de Bonv. Mon. p. 642[3].
*Emathion quadraticolle,* Lucas, in Cast. Expéd. dans l'Amér. du Sud, iii. p. 72[4].

*Hab.* Mexico, Cordova[3], Playa Vicente (*Sallé*).—Colombia, Cartagena[3]; Venezuela[2 3]; Guiana, Cayenne[1]; Brazil[4]; Antilles, Cuba[2 3].

Rather more robust than *E. anxius*, and with different vestiture.

### 3. Emathion intrusus.

Similar in form to *E. leprieuri*, but more robust: antennæ reddish-brown, the second joint distinctly longer than either the fourth or fifth, these together but little longer than the sixth; clypeus at the base a little wider than the distance to the eye; thorax longer than wide, with parallel sides, arcuately narrowed at the front angles, disc slightly depressed, discal foveæ very indistinct, median line rather deeply impressed from a little before the base to two-thirds of the distance to the apex, from which point it becomes evanescent, surface closely submuricately punctate, the intervals shining, at the sides opaque, more densely punctate, the punctures forming strigæ, pubescence sparse, brown, inconspicuous; elytra vaguely striate, more deeply at the apex, where the striæ are coarsely punctured, intervals closely, submuricately punctate, slightly shining, and with transverse strigæ; abdomen densely and more finely punctured than above, the last segment much more coarsely at the tip, pubescence fine, fulvous.
Length 11 millim.

*Hab.* Nicaragua, Chontales (*Belt*).

While resembling *E. leprieuri* in form and colour, it may be known at a glance by the comparatively shining surface, owing to the less dense punctuation.

## NEMATODES.

*Nematodes*, Latreille, Fam. Nat. p. 248 (1825); de Bonvouloir, Mon. des Eucnémides, p. 644.
*Sphærocephalus*, Eschscholtz, in Silberm. Rev. Ent. iv. p. 4 (1836).

The species of this genus are quite readily recognized by their facies; this, together with the acute prolongation of the last ventral segment and the excavate-emarginate fourth tarsal joint, will enable them to be separated almost at a glance.

### 1. Nematodes mexicanus.

*Galba mexicana*, Cast. in Silberm. Rev. Ent. iii. p. 174 [1].
*Nematodes mexicanus*, de Bonv. Mon. p. 648, t. 31. fig. 3 [2].

*Hab.* Mexico [1], Cordova [2], San Andres [2], Playa Vicente [2] (*Sallé*), Cerro de Plumas, Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Yzabal, Panzos, Teleman, Chacoj, and Cubilguitz in Vera Paz, Zapote (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Bugaba (*Champion*).

This species is known by the presence of a short but distinct carina limiting the antennal depression distinct from the lateral margin. A variety *litigiosus* has been described from Cayenne which has not been observed within our limits.

### 2. Nematodes mannerheimi.

*Nematodes Mannerheimii*, de Bonv. Mon. p. 651, t. 31. fig. 4 [1].

*Hab.* Mexico, Cordova [1], Playa Vicente [1], Santecomapan (*Sallé*), Cerro de Plumas (*Höge*); Panama, Tolé (*Champion*).

Similar to *N. mexicanus*, but without the short carina, and differs from the next by having an indication of a carina at the inner angle of the antennal fovea.

### 3. Nematodes cuneatus.

*Emathion cuneatum*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 179 [1].
*Nematodes cuneatus*, de Bonv. Mon. p. 655 [2].

*Hab.* Mexico, Cordova (*Sallé* [2]); Nicaragua, Chontales (*Belt*); Costa Rica, Cache (*Rogers*); Guatemala, Teleman in Vera Paz (*Champion*); Panama, Bugaba, Volcan de Chiriqui, Tolé (*Champion*).—Guiana, Cayenne [2]; Amazons, Ega [2]; Brazil [2], Bahia [1].

The elytra vary in sculpture, and may be faintly or not striate. In size it varies from 7 to 15 millim.

### 4. Nematodes atropos.

*Eucnemis atropos*, Say, Trans. Am. Phil. Soc. vi. p. 187.
*Emathion atropos*, Lec. Proc. Acad. Phil. vi. p. 47; Trans. Am. Phil. Soc. x. p. 414.

*Nematodes atropos*, de Bonv. Mon. p. 656, t. 31. fig. 6[1]; Horn, Trans. Am. Ent. Soc. 1886, p. 41[2].

*Hab.* North America[1], Canada to Louisiana[2].—Mexico, Cordova[1] (*Sallé*).

A single specimen of this species from the Sallé collection so labelled by de Bonvouloir seems to differ in some details from North-American examples; but with the known variability of the members of the genus it would be unsafe to consider it distinct.

### 5. Nematodes biarti.

*Nematodes Biarti*, de Bonv. Mon. p. 669, t. 32. fig. 4[1].

*Hab.* Mexico, Orizaba (*Biart*[1]), Jalapa (*Höge*).

Easily known by the joints 7–9 of the antennæ being as broad as long.

### 6. Nematodes cylindricus.

*Emathion cylindricum*, Cast. in Silberm. Rev. Ent. iii. p. 171[1]; Hist. Nat. Col. i. p. 225[2].
*Nematodes cylindricus*, de Bonv. Mon. p. 676, t. 32. figg. 7, 8[3].

*Hab.* Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).—Venezuela, Caracas[3]; Guiana, Cayenne[2 3]; Amazons, Ega[3]; Brazil, Bahia[2 3].

Of this species de Bonvouloir remarks that it is one of the most variable, and very difficult to accurately define. It belongs to a small group without trace of elytral striæ.

## TRIGONOPLEURUS.

*Trigonopleurus*, de Bonvouloir, Mon. des Eucnémides, p. 681 (1870).

Closely related to *Nematodes*, but with the metasternal episternum much narrowed in front. The two species known agree in having the fourth and fifth joints of the antennæ very small and equal, together shorter than either the third or sixth.

### 1. Trigonopleurus alienus.

Subcylindrical, moderately elongate, parallel, piceous-black, opaque, sparsely clothed with a short, indistinct, cinereous pubescence: antennæ piceous, a little longer than the thorax; head convex, densely coarsely punctate, a very short carina in front; thorax longer than wide, slightly wider at the apical third than at the base, sides straight, arcuately narrowed in front, disc convex, an acutely impressed line extending from the basal margin one third towards the apex, surface densely rather asperately punctate; elytra finely striate, intervals flat, closely roughly punctate, less so than the thorax; body beneath piceous-black, cinereo-pubescent, closely punctate, more coarsely on the abdomen; femora piceous, tibiæ and tarsi brown. Length 5 millim.

*Hab.* Panama, Tolé (*Champion*).

The only other known species of the genus is said to be from Victoria, N.S.W.*, which differs from this in colour and in the presence of a long carina on the front.

* This locality requires confirmation: Gemminger and Harold, Cat. v. p. 1479, give "Amer. bor.;" but the genus is not known to me from temperate North America.

## DIAPODIUS.

*Diapodius*, de Bonvouloir, Mon. des Eucnémides, p. 785 (1870).

To this genus, represented hitherto by two species, one from Singapore and one from Malacca, an insect from Chontales is referred. A comparison might show characters of generic value, but from the details given by de Bonvouloir, even some that are specific, there seems to be an agreement.

### 1. **Diapodius bicolor.**

Oblong, cylindrical, slightly narrowed behind, shining black above; metasternum, abdomen, and legs ferruginous; pubescence sparse and inconspicuous, cinereous on the thorax and base of the elytra, black behind: antennæ black, not serrate, first joint coarsely punctured and transversely strigose, third joint longer than the next two; head (seen laterally) concave, the supra-antennal ridges strongly elevated, the cavities beneath large, front rather deeply impressed at the base of the clypeus, this much narrower at the base than the distance to the eye, surface rather coarsely punctured, the punctures forming close transverse strigæ; thorax longer than wide, sides straight and parallel, apex (seen from above) nearly semicircular, median line deeply impressed at the base, extending two-thirds to the apex and becoming gradually more shallow, disc regularly convex, with coarse transverse strigæ, which are finely punctured along their posterior border; elytra with vague traces of striæ near the humeri and close to the basal margin, surface more shining than the thorax, along the middle sparsely finely punctate, at the sides and base more roughly, the punctures tending to form strigæ; prothorax beneath coarsely, not closely punctate, the antennal groove moderately deep and smooth; metasternum finely punctate, the punctures forming transverse strigæ; posterior coxal plates extremely finely punctured; abdomen finely, sparsely punctured at the middle, more coarsely at the sides, last segment near the apex obtusely compresso-carinate, the summit of the carina obtusely spinous, the sides coarsely muricate, apex of the segment narrowly prolonged, obtuse at the tip.

Length 14 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

The description has been extended to enable comparison to be made with the other species of *Diapodius*. At first glance the above species resembles a rather stout *Nematodes cylindricus*.

## PHLEGON.

*Phlegon*, Castelnau, Hist. Nat. Ins. Col. i. p. 254 (1840); de Bonvouloir, Mon. des Eucnémides, p. 746.

*Euryptychus*, Leconte, Proc. Acad. Phil. vi. p. 186.

### 1. **Phlegon viduus.** (Tab. X. fig. 21.)

Oblong elongate, rather feebly convex, black, opaque, sparsely pubescent: antennæ black, stouter towards the tip, the last three joints equal to all the preceding, excluding the first; head densely punctured, clypeus but little wider at the base than half the distance to the eye; thorax broader than long, sides arcuately narrowing to the apex, hind angles slightly divergent, disc regularly convex, a median smooth line extending from the base one third towards the apex, surface densely punctured; elytra a little wider than the thorax, finely striate, intervals slightly convex, densely punctured and opaque; body beneath opaque black, densely punctured, sparsely pubescent; legs piceous-black.

Length 8 millim.

*Hab.* MEXICO, Oaxaca (*Höge*); GUATEMALA, Guatemala city (*Rodriguez*).

This species has quite a different facies from either of the North-American ones. It

agrees with them in having the fourth tarsal joint simple. It is quite probable that these species should be separated generically from *P. buqueti*, as de Bonvouloir asserts in his table and text that the fourth tarsal joint is excavate-emarginate, having probably used the latter species as his type. In this case *Euryptychus* will be valid.

## ANELASTES.

*Anelastes*, Kirby, Trans. Linn. Soc. xii. p. 384 (1818); de Bonvouloir, Mon. des Eucnémides, p. 710.

*Silenus*, Latreille, Ann. Soc. Ent. Fr. 1834, p. 128.

This is one of the few genera at present admitted to the family which help to make its definition difficult. From all those occurring in our faunal limits it will be known by the very abruptly narrowed posterior coxal plates.

### 1. Anelastes druryi.

*Anelastes Druryi*, Kirby, Trans. Linn. Soc. xii. p. 384, t. 21. fig. 2[1]; Guérin, Ann. Soc. Ent. Fr. 1843, p. 177[2]; Lec. Trans. Am. Phil. Soc. x. p. 413[3]; de Bonv. Mon. p. 713[4]; Horn, Trans. Am. Ent. Soc. 1886, p. 49[5].

*Elater erosus*, Say, Ann. Lyc. N. York, i. p. 258[6].

*Silenus brunneus*, Latr. Ann. Soc. Ent. Fr. 1834, p. 129[7].

*Anelastes Latreillei*, Lec. Proc. Acad. Phil. vi. p. 47[8]; de Bonv. Mon. p. 713, t. 34. fig. 7[9].

*Hab.* North America[3 6], Vancouver[5 9], Canada[5], Atlantic region[5], United States[4 7], California[8 9].—Mexico[9], Ciudad in Durango (*Forrer*, *Höge*), Ventanas and Refugio in Durango (*Höge*), Juquila, Chiapas (*Sallé*); Guatemala, Guatemala city (*Champion*).

Two forms have been separated by Leconte and admitted by de Bonvouloir,—*A. druryi* being more opaque and *A. latreillei* more shining. The former is characteristic of the more southern portions of the United States, while the latter is peculiar to the western regions, especially those bordering the Pacific. The two forms occur within our fauna and closely intergrade.

## ENTOMOPHTHALMUS.

*Entomophthalmus*, de Bonvouloir, Mon. des Eucnémides, p. 513 (1870).

The species of this genus have a facies separating them at a glance from *Microrhagus*. The very small second and third joints of the antennæ will at once enable them to be distinguished.

### 1. Entomophthalmus americanus.

*Entomophthalmus americanus*, de Bonv. Mon. p. 516[1].

*Hab.* Panama, Volcan de Chiriqui (*Champion*).—Colombia[1]; Brazil[1]; Peru.

The individuals examined by de Bonvouloir were evidently all males. This sex has

the antennæ three fourths, or even more, of the length of the body, while in the female they are stouter and but little more than half the length of the body. On the last ventral segment there is a small smooth tubercle near the middle in the male, while the female has an oval pubescent fovea.

### 2. Entomophthalmus minutus.

*Entomophthalmus minutus*, de Bonv. Mon. p. 521 [1].

*Hab.* Panama, Bugaba (*Champion*).—Brazil, Santa Catarina [1].

Similar in form to the preceding, but with the incisure of the eye much smaller. The colour is piceous-brown, the head and apex of the thorax more reddish, the suture of the elytra and apical third are also paler than the remainder of the surface. One male specimen with the last ventral segment as in *E. americanus*.

### 3. Entomophthalmus asper.

Moderately elongate, very little narrowed behind, piceous-black, feebly shining, indistinctly pubescent; head and anterior border of the thorax reddish-brown: antennæ piceous, subserrate, third joint very small, closely applied to the base of the fourth and not easily seen; head convex, densely coarsely punctate; eyes emarginate in a broad triangle, which does not attain the middle; thorax nearly square, slightly broader at the base than at the apex, disc convex, densely punctate, and subopaque, hind angles with a short but strong carina, anterior inferior supplementary line entire, the superior line very short, posterior inferior line long, nearly reaching the apical margin; elytra obsoletely striate, the intervals relatively coarsely transversely rugose, especially near the base; body beneath piceous, abdomen brown, moderately coarsely and closely punctate; legs ferruginous, middle and posterior femora darker.
Length 4 millim.

*Hab.* Panama, Volcan de Chiriqui (*Champion*).

This is the only known species with the elytra roughly sculptured. The antennæ apparently resemble those of *E. fugax*. One male specimen has been seen, which has the small tubercle on the middle of the last ventral segment.

## MICRORHAGUS.

*Microrhagus*, Eschscholtz, in Silberm. Rev. Ent. iv. p. 4 (1836); de Bonvouloir, Mon. des Eucnémides, p. 524.
*Dirhagus*, Latreille, Ann. Soc. Ent. Fr. 1834, p. 130.
*Rhacopus*, Hampe, Verh. zool.-bot. Ges. Wien, v. p. 255.
*Aulacosternus*, Motschulsky, Bull. Mosc. i. p. 116.

The species contained in *Microrhagus* are, on the whole, the smallest of the Eucnemidæ, and from their generally uniform facies of difficult study. The industry and acute observation of de Bonvouloir have produced results almost beyond criticism, one point alone needing serious remark. The fovea on the last or on the penultimate ventral segment is purely a female character and should not have been used in a table for the

separation of species. Two important characters have been observed in species described below which would hardly have escaped him had they existed in the then known species. In two of them (*M. marcidus* and *M. protractus*) the eyes are much larger than usual, so that the front between them is comparatively narrow; while in three species (*M. ruficeps*, *M. frœnatus*, and *M. maculicollis*) the eyes are distinctly incised in front, as is usual in *Entomophthalmus*.

Owing to the great increase of the number of species in our fauna, it has been deemed advisable to present their more striking characters in tabular form to assist in their identification.

| | | |
|---|---|---|
| 1. | Posterior coxal plates distinctly wider internally | 2. |
| | Posterior coxal plates parallel-sided | 10. |
| 2. | Metasternal episterna very narrow or partly concealed in front, broader behind | 3. |
| | Metasternal episterna parallel-sided | 7. |
| 3. | Outer carina of the juxta-sutural groove entire | 4. |
| | Outer carina of the juxta-sutural groove obliterated behind | *unicus*. |
| 4. | Eyes entire; species piceous-black | 5. |
| | Eyes triangularly incised in front | 6. |
| 5. | Clypeus nearly as wide at the base as the distance to the eyes; antennæ (♂) not pectinate | *sepositus*. |
| | Clypeus very narrow at the base; antennæ (♂) pectinate. | |
| | Thorax carinate at the middle near the base | *repandus*. |
| | Thorax not carinate, disc less densely punctured | *intrusus*. |
| 6. | Black; head reddish; thorax dark brown, with median and lateral lines of pubescence more distinct | *frœnatus*. |
| | Piceous-brown; elytra indefinitely rufescent at the tip and sometimes along the suture | *ruficeps*. |
| 7. | Eyes large, nearly as wide as the front between them | 8. |
| | Eyes small, normal; thorax bicoloured; antennæ long | 9. |
| 8. | Colour rufo-testaceous | *marcidus*. |
| | Colour piceous-brown; apical margin of the thorax and the base and suture of the elytra red | *protractus*. |
| 9. | Eyes incised in front; antennæ (♂) pectinate | *maculicollis*. |
| | Eyes entire; antennæ (♂) serrate. | |
| | Propleuræ densely punctate; outer carina of the groove obliterated behind | *elatus*. |
| | Propleuræ sparsely punctate, shining; outer carina of the groove entire; groove very narrow | *insidiosus*. |
| 10. | Outer carina of the propleural groove entire; elytra reddish-brown | *meticulosus*. |
| | Outer carina of the propleural groove abbreviated behind. | |
| | Elytra red at the basal third | *humeralis*. |
| | Head and thorax reddish-brown | *thoracicus*. |

### 1. **Microrhagus unicus.**

*Microrhagus unicus*, de Bonv. Mon. p. 575, t. 27. fig. 8 [1].

*Hab.* Mexico, Teapa (*coll. Chevrolat* [1]).

This species has a moderately wide clypeus at the base, the antennæ of the male pectinate, the propleural groove rather wide behind, its outer carina obliterated posteriorly, and the elytra distinctly striate.

No specimens have been seen by us.

### 2. **Microrhagus sepositus.**

Cylindrical, moderately convex, piceous-black, shining, indistinctly clothed with short fulvous pubescence: antennæ brown, half as long as the body, strongly serrate from the fourth joint; head convex, neither carinate nor impressed, closely punctate, not rugose except on the occiput, clypeus wider at the base than the distance to the eye; thorax a little wider than long, sides straight and parallel, rounded at the front angles, disc convex, a very faint indication of a median impression, an oblique impression each side of the middle of the base, surface coarsely and closely punctate, not rugose, more finely at the apex; elytra almost absolutely without striæ, the sutural stria very short and apical, surface moderately closely punctate, dense and subrugose at the base, more sparse at the apex, where several of the intervals are acutely granulate; posterior supplementary line of the propleuræ extending halfway to the apex, outer carina of the groove entire; abdomen moderately closely punctate; legs piceous, tibiæ and tarsi sometimes ferruginous.

Length 3·5 millim.

*Hab.* Guatemala, San Juan in Vera Paz (*Champion*).

According to the table by de Bonvouloir, this species is closely related to *M. pyrenæus*, which, however, has the elytra more or less striate and the base and suture rufescent.

### 3. **Microrhagus repandus.**

Cylindrical, moderately convex, narrowed behind in both sexes, piceous-black, shining, very sparsely pubescent, the cinereous pubescence quite conspicuous at the sides and base of the thorax and at the basal third of the elytra; antennæ piceous, a little longer than half the body in both sexes, joints 3–10 pectinate (♂), the branches one half longer than the joint, serrate (♀), the joints but little longer than wide at the apex; head densely subrugosely punctate, not carinate or impressed, eyes entire, clypeus very narrow at the base; thorax subquadrate, nearly as long as wide, sides with a slight sinuation at the middle, arcuately narrowed near the apex only, disc convex, slightly depressed in front of the hind angles, a carina at the middle near the base, usually well elevated, surface very coarsely closely punctate but not rugose; elytra usually very indistinctly striate, intervals muricately punctate, densely and roughly at the basal third, more sparsely towards the apex; propleural groove deep and parallel, the outer edge sharp and entire, the posterior supplementary line extending two-thirds to the apex; body beneath piceous-black, shining, abdomen rather coarsely and closely punctate; legs ferruginous, the femora sometimes infuscate.

Length 3–3·5 millim.

*Hab.* Guatemala, San Juan and Chiacam in Vera Paz, El Reposo, San Isidro (*Champion*); Panama, Bugaba, Volcan de Chiriqui, Caldera, Tolé (*Champion*).

This species is evidently related to *M. amazonicus*, but is smaller, and differs in the rougher sculpture at the base of the elytra and other minor details. De Bonvouloir does

not mention the sex of the specimens he describes; it is therefore presumable that the males of *M. amazonicus* do not have pectinate antennæ. One male specimen before me from San Isidro agrees with the typical forms above described, except that the thoracic carina is replaced by a short smooth line. It does not seem advisable to separate it.

### 4. **Microrhagus intrusus.**

Closely related to *M. repandus*, differing only in the following details:—Thorax coarsely punctate with distinct smooth intervals between the punctures, at the base without trace of a median carina; antennæ (♂) pectinate, the branches at least three times longer than the joint, (♀) strongly serrate, the joints at the apex wider than long.

Length 3 millim.

*Hab.* GUATEMALA, Chacoj (*Champion*); PANAMA, Bugaba (*Champion*).

### 5. **Microrhagus frænatus.** (Tab. X. fig. 22, ♂.)

Cylindrical, moderately convex, narrowed posteriorly, feebly shining; head reddish, thorax dark brown, elytra piceous-black; surface pubescent, that of the thorax yellowish-cinereous, darker along either side of the middle, that of the elytra dark on the disc, cinereous along the side margin: antennæ piceous, longer than half the body, slightly serrate; head convex, closely subrugosely punctate, not carinate or impressed, clypeus narrower at the base than half the distance to the eyes, these triangularly excised in front; thorax quadrate, very little wider than long, sides straight and parallel, arcuate at the front angles only, disc convex, depressed in the region of the hind angles, a punctiform impression each side of the middle of the base, between these an obtuse elevation, surface densely but not coarsely rugosely punctate; elytra very vaguely striate, the intervals subgranulately punctate, rugose at the base; propleural groove much broader behind, its outer carina entire, the posterior inferior carina extending two-thirds to the apex; body beneath piceous; abdomen densely, moderately coarsely punctate; legs entirely piceous.

Length 3 millim.

*Hab.* GUATEMALA, Zapote (*Champion*).

An easily known species by its colour above and by the trivittate arrangement of the pubescence on the thorax. There does not seem to be any described species particularly related to it. The unique male has a small tubercle at the middle of the last ventral segment.

### 6. **Microrhagus ruficeps.**

Cylindrical, narrower posteriorly, moderately convex, piceous-brown, shining, sparsely clothed with short fulvous pubescence, antennæ, head, apex of the thorax, apex and often the suture of the elytra, and legs rufescent: antennæ as long as (♀) or a little longer than (♂) half the body, not strongly serrate; head convex, not carinate or impressed, moderately closely punctate, but with distinct intervals, clypeus as broad at the base as the distance to the eyes, these distinctly incised in front; thorax scarcely wider than long, quadrate, sides straight and parallel, slightly rounded at the apex only, disc moderately convex, a very vague oblique impression each side of the middle of the base, surface moderately, not closely punctate, a vague groove along the apical border externally; elytra extremely indistinctly substriate, sutural stria short, intervals more finely punctate than the thorax, and gradually more sparsely to the apex; propleural groove distinctly wider behind, its outer carina entire, the posterior supplementary carina extending halfway to the apex; body beneath reddish-brown, abdomen closely punctate; legs paler.

Length 2–3·5 millim.

*Hab.* GUATEMALA, San Isidro (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

Also closely related to *M. pyrenæus*, and resembling it in colour, but with the head entirely red. Its facies is not unlike that of *Entomophthalmus*, and the structural resemblance is increased by the incisure of the eye in front. The male has a small tubercle at the middle of the last ventral segment, and the female an indistinct oval flattened space.

### 7. **Microrhagus marcidus.**

Cylindrical, slightly depressed, pale rufo-ferruginous, feebly shining, sparsely pubescent: antennæ slender, serrate, two-thirds the length of the body; head convex, not carinate or impressed, coarsely and moderately closely punctate, clypeus broader at the base than the distance to the eyes, these large, entire, the front between them but little wider than either eye; thorax nearly a third wider than long, slightly wider in front, sides straight, arcuate only at the front angles, a slight groove along the apical border, disc convex, the posterior declivity rather flat, a small tubercle immediately in front of the middle of the base, surface rather finely, not closely punctate; elytra vaguely striate near the base, the sutural stria entire, the striæ at the apex with coarse deep punctures, intervals finely and rather sparsely punctate; propleural groove distinctly limited externally by an entire ridge, posterior inferior supplementary line extending three-fourths to the apex, the propleural area internal to this line more than three times as wide at the base as the groove; metasternal episternum narrow but parallel; abdomen finely, rather sparsely punctate at the base, coarsely at the apex.

Length 3·5 millim.

*Hab.* Panama, Bugaba (*Champion*).

Evidently somewhat related to *M. dilutus*, but with a wider thorax and differently sculptured elytra.

### 8. **Microrhagus protractus.**

Elongate, depressed cylindrical, parallel, piceous-brown, the anterior margin of the thorax indistinctly, the scutellum, base of the elytra, and suture reddish, moderately shining, sparsely fulvo-pubescent: antennæ ferruginous, three-fourths the length of the body, slender, serrate; head convex, moderately closely, not coarsely punctate, clypeus much wider at the base than the distance to the eyes, these large; thorax nearly twice as wide as long, sides straight and parallel, arcuate at the front angles only, a slight groove behind the apical margin, disc convex, transversely flattened in front of the base, a faint tubercle at the middle of the base, surface finely and moderately closely punctate; elytra rugosely substriate at the base, the striæ at the apex with coarse deep punctures, intervals finely, rather sparsely punctate; propleural groove narrow, wider in front, its outer carina entire, posterior inferior supplementary carina extending nearly to the apex, the propleural area wider at the base than long; metasternal episternum moderately wide and parallel; abdomen sparsely, finely punctate, more coarsely on the apical segment.

Length 5·5 millim.

*Hab.* Panama, Bugaba (*Champion*).

This species is closely related to *M. suturalis* in form and colour. It differs in having serrate antennæ, and in the coarsely punctured striæ at the apex. One male specimen.

### 9. **Microrhagus maculicollis.**

Oblong, parallel, depressed-cylindrical, piceous-black, opaque, sparsely pubescent, head in part yellow, thorax broadly yellow at the sides: antennæ piceous-black, evidently longer than half the body (last five joints wanting), third joint triangular, joints 4–6 pectinate (♂), the branches longer than the joint; head convex, moderately closely punctate, in great part yellow, a triangular spot at the occiput, a space around the antennal foveæ, and the apex of the clypeus black, clypeus a little wider at the base than the distance to the eyes, these distinctly triangularly incised in front; thorax one third wider than long, sides straight

and parallel at the base, arcuately narrowed at the apical third, disc convex, closely subasperately punctate, colour pale yellow, a broad median black space arcuately wider posteriorly; elytra finely striate, the striæ distinctly punctate at the apical third and at the sides, intervals moderately closely submuricately punctate, somewhat transversely wrinkled near the base; epipleuræ yellow at the base; pronotum beneath yellow, except a narrow space exterior to the propleural grooves, these narrow, the outer carina not reaching the base; propleural area wider at the base than long, the posterior inferior supplementary line sinuous, extending two-thirds to the apex; metasternum in front margined with yellow, its episternum narrow but parallel; abdomen finely sparsely punctate, brownish, broadly darker at the middle, more narrowly at the sides; legs piceous.

Length 4 millim.

*Hab.* PANAMA, Bugaba (*Champion*).

This species seems more nearly related to *M. egregius* than to any other described by de Bonvouloir, but it differs in many important points of sculpture and colour. One imperfect male specimen seen.

### 10. **Microrhagus elatus.**

Subcylindrical, parallel, piceous-black, subopaque, sparsely pubescent, thorax reddish-yellow, with a broad median stripe extending from the base to the apex, narrower behind, and the hind angles piceous: antennæ black, nearly as long as the entire body (♂), or somewhat shorter (♀), serrate in both sexes, but more broadly in ♀; head brownish or black, densely punctate, clypeus at the base a little narrower than the distance to the eyes, these entire; thorax one fourth wider than long, sides straight and parallel at the middle, arcuate at the apical third, hind angles slightly divergent, disc convex, densely punctate, clothed with silken yellow pubescence, more compressed at the sides; elytra striate, striæ not punctate, intervals densely submuricately punctate, somewhat transversely wrinkled near the base; body beneath piceous-black, shining, abdomen brownish at the sides; propleural groove narrow, the outer carina not entire, posterior inferior supplementary line not reaching the middle in front, propleural area densely punctate; abdomen closely punctate; legs piceous, the tips of the tarsi ferruginous.

Length 4–4·5 millim.

*Hab.* GUATEMALA, Zapote (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Related to *M. maculicollis*; but the male antennæ are not pectinate, the eyes are entire, and the striæ are not punctate at the apex.

### 11. **Microrhagus insidiosus.** (Tab. X. fig. 23, ♂.)

Similar in form to *M. elatus*, piceous-black, opaque, sparsely pubescent, thorax reddish-yellow, with a central elongate-oval piceous spot, narrow behind, not reaching the apical or basal margin: antennæ black, nearly as long as the body, slender but serrate; head convex, densely subrugosely punctate, concave above the base of the clypeus, which is as wide as the distance to the eyes, these entire; thorax one third wider than long, sides parallel at the middle, slightly sinuous, anterior third obliquely narrowed, disc convex, a moderately deep impression each side of the middle, median line posteriorly finely carinate, prolonged in front in a faint median groove, surface closely punctate; elytra obsoletely striate at the middle and near the base, distinctly at the sides and apex, striæ not punctate at the apex, intervals rather closely roughly punctate, more densely near the base, and somewhat transversely wrinkled; body beneath piceous-black, shining; pronotum beneath sparsely punctate, black, except near the hind angles, propleural groove very narrow posteriorly, wider in front, the outer carina entire, posterior inferior supplementary line sinuate, extending nearly to the apex; abdomen finely and rather sparsely punctate at the middle, more coarsely and densely at the sides and apex; legs piceous, tips of the tarsi pale.

Length 5·5 millim.

*Hab.* GUATEMALA, Capetillo (*Champion*).

It would be rather difficult to assign this insect to a generic position in the absence of the closely related species. The propleural groove is so very narrow posteriorly that it seems to be in front merely a separation of the prosternal sutures. While the species closely resembles *M. elatus*, it differs in the much longer postero-inferior line, the comparatively smooth propleuræ, and the feeble elytral striæ at the middle near the base. One male specimen alone has been seen.

### 12. **Microrhagus meticulosus.**

*Microrhagus meticulosus*, de Bonv. Mon. p. 604 [1].

*Hab.* Mexico, Cordova (*Sallé* [1]).

By some singular mistake, de Bonvouloir has confounded two very distinct species, this and the following. Having now the type before me it is possible to indicate the differences. *M. meticulosus* has entirely ferruginous elytra, the thorax not grooved along the middle, and the outer carina of the juxta-sutural groove entire. This species has not yet occurred in temperate North America. The figure (t. 29. fig. 6) given by de Bonvouloir applies to *M. humeralis*.

### 13. **Microrhagus humeralis.**

*Eucnemis humeralis*, Say, Trans. Am. Phil. Soc. vi. p. 189 [1].

*Microrhagus humeralis*, Lec. Proc. Acad. Phil. vi. p. 48 [2]; de Bonv. Mon. p. 607 [3]; Horn, Trans. Am. Ent. Soc. 1886, p. 36 [4].

*Hab.* North America, United States from Canada southward [4], Pennsylvania [2 3], Indiana [1], Tennessee, Georgia [3], Louisiana [3]. — Guatemala, Capetillo (*Champion*); Panama, Caldera in Chiriqui (*Champion*).

This species is quite constant in its colour, piceous-black, the elytra at the basal third orange-red. The disc of the thorax is feebly impressed along the median line and the outer carina of the juxta-sutural sulcus does not extend more than three-fourths to the base. The description of *M. meticulosus* seems to have been made from this species, at least in part, while the figure (t. 29. fig. 6) is very good for this one.

### 14. **Microrhagus thoracicus.**

Cylindrical, convex, piceous-black, feebly shining, head and thorax reddish-brown, very indistinctly pubescent: antennæ piceous, strongly (♂) or moderately serrate (♀), a little longer than half the body; head convex, not carinate or impressed, coarsely, closely, and subrugosely punctate; thorax a little longer than wide at the base, sides straight and parallel, arcuate near the front angles only, disc convex, sometimes with a fovea each side of the middle, an oblique impression each side of the middle of the base, and a depression at the hind angles, a faint trace of a median carina near the base, surface rather coarsely and closely punctate posteriorly, densely and more finely in front, carina of the hind angles well elevated, anterior supplementary line extending one third towards the base, the posterior line well defined, extending two-thirds to the apex, the outer carina of the juxta-sutural groove extending only two-thirds to the base; elytra striate, intervals slightly convex, closely muricately punctate, especially at the base; tip of

the prosternum acute; body beneath piceous, coarsely closely punctate; posterior coxal plates equally broad, not dilated internally; legs paler reddish-brown, femora somewhat darker.
Length 3–4 millim.

*Hab.* GUATEMALA, Las Mercedes (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Allied to *M. humeralis*, but differs in colour and by the absence of any median impression on the thorax. In well-preserved specimens the fulvous pubescence of the thorax is more distinct at the sides and hind angles.

## FARSUS.

*Farsus*, Jacquelin-Duval, Gen. Col. Eur. iii. p. 116 (1860); de Bonvouloir, Mon. des Eucnémides, p. 618.

This genus is closely related to *Microrhagus* and *Arrhipis*, differing from the former in the absence of a well-defined depression along the inner edge of the propleuræ, and from the latter by having the inferior marginal line which continues the apical margin prolonged well backward.

### 1. Farsus obscurus.

*Farsus obscurus*, de Bonv. Mon. p. 624, t. 30. fig. 6[1].

*Hab.* MEXICO, Toxpam, Cordova (*Sallé*[1]); NICARAGUA, Chontales (*Belt*).

The only specimens seen are unfortunately in bad condition.

### 2. Farsus oblitus.

Cylindrical, moderately convex, slightly narrower behind, varying in colour from brown to piceous, subopaque, sparsely pubescent: antennæ slender, varying in colour from ferruginous to piceous, a little longer than half the body; head convex, a vague triangular impression at the base of the clypeus, densely rugosely punctate, the clypeus nearly as wide as the distance to the eye; thorax nearly as long as wide, sides parallel at the basal half, then arcuate to the apex, convex, the disc slightly depressed, a slight smooth median line behind the middle, slightly elevated at the base, no basal oblique impressions, surface densely asperately punctate; elytra vaguely striate, the intervals closely punctate, densely at the base; prosternum coarsely closely punctate, the impression of the propectus limited behind by a distinctly elevated transverse line; abdomen moderately closely but indistinctly punctate; legs yellowish-testaceous.
Length 3–4 millim.

*Hab.* GUATEMALA, Mirandilla, Torola (*Champion*); PANAMA, San Lorenzo in Chiriqui (*Champion*).

Allied to *F. elevatus*, which has a similar transverse line limiting the impression of the propectus; but differs in the absence of oblique impressions at the base of the thorax and by the longitudinal impression of the head. Three specimens, the one of paler colour evidently less mature.

## ADELOTHYREUS.

*Adelothyreus*, de Bonvouloir, Mon. des Eucnémides, p. 609 (1870).

This genus scarcely differs from *Farsus*, except in having the first joint of the posterior tarsus as long as the following joints together.

Two species occur in our fauna.

### 1. **Adelothyreus flavosignatus.**

*Adelothyreus flavosignatus*, de Bonv. Mon. p. 614, t. 30. fig. 1 [1].

*Hab.* Mexico [1], Cordova (*Sallé*); Guatemala, Mirandilla (*Champion*).—Colombia [1].

A pretty species of slender form, having on each elytron an oval yellow spot of variable size.

### 2. **Adelothyreus comes.**

Subcylindrical, slightly narrowed posteriorly, piceous-black, subopaque: antennæ—(♀) ferruginous, not half as long as the body, joints 4–10 strongly serrate, and gradually becoming slightly shorter—(♂) piceous, joints 4–11 gradually longer, 4–10 pectinate, the branches at least twice as long as the joint; head densely and rather coarsely punctate, a slight frontal tubercle smoother; thorax slightly longer than wide, sides parallel, arcuate in front, disc flattened, median line distinctly impressed on the posterior declivity, becoming very vague anteriorly, on each side of the middle of the base a moderately deep and broad oblique depression, a shorter but deeper one above the hind angles, surface densely punctate, somewhat rugose, subgranulate near the sides, pubescence very short and inconspicuous; elytra vaguely striate at the base, more distinctly at the apex, intervals closely rugosely punctate, subgranulate at the base; sides of the metasternum and posterior coxal plates almost cribrately punctate; abdomen closely coarsely punctate, cinereo-pubescent; legs ferruginous.

Length 5 millim.

*Hab.* Mexico, Cerro de Plumas (*Höge*); Panama, Bugaba, Volcan de Chiriqui, San Feliz (*Champion*).

This species is evidently very closely related to *A. dejeani* from temperate North America, of which examples are not at hand for comparison. The specimens have indistinctly brown humeri.

## ADELORHAGUS.

Form cylindrical. Antennæ slender, slightly serrate, longer than half the body; first joint equal to the next two, second small, third longer than half the first, fourth a little shorter than the third, fourth to the tenth gradually increasing in length, eleventh nearly as long as the preceding two. Clypeus feebly arcuate in front, the angles joining the genæ by a narrow isthmus, the base narrower than the distance to the eyes. Thorax with the hind angles strongly carinate; the posterior inferior marginal line sharply defined nearly three-fourths to the apex, the anterior inferior line very short, the upper supplementary line curving nearly to the middle. Propectus without well-defined groove, with merely a smooth space along the suture. Metasternal episterna narrow, parallel. Posterior coxal plates very little broadened internally. Last ventral segment triangularly prolonged. Hind tarsi shorter than the tibiæ, the first joint shorter than the following joints together, the fourth very small, excavate-emarginate; claws simple.

This new name is suggested for a small species which will not enter any of the genera allied to *Microrhagus*. While it possesses many of the more important characters of

*Arrhipis*, it differs in its longer and more slender antennæ and by the triangularly prolonged last ventral segment. The hind angles of the thorax are well carinate, as in *Entomophthalmus mexicanus*.

### 1. **Adelorhagus lateralis.** (Tab. X. fig. 24.)

Oblong, subcylindrical, gradually narrowed behind from the base of the thorax, pale ferruginous, the sides of the elytra and sometimes the suture fuscous, subopaque, sparsely pubescent; antennæ piceous, the last joint yellowish: head closely, rather coarsely punctured, a triangular depression anteriorly with the base towards the clypeus; thorax as broad as long, sides straight and parallel at the middle, arcuately narrowed in front, slightly divergent at the hind angles, which are strongly carinate, disc convex, median line vaguely depressed nearly three-fourths to the apex, surface closely subgranulate; elytra striate, striæ rather coarsely punctate, intervals narrow, punctate, at the sides more coarsely than on the disc; beneath much paler than above, sparsely pubescent, coarsely punctate, abdomen coarsely punctate at the sides, very finely at the middle; legs pale yellow.

Length 4 millim.

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

The fuscous border of the elytra begins at the humerus, but does not reach the tip; the suture is not so distinctly darkened. Three specimens representing the two sexes are before me; that supposed to be the female has slightly shorter antennæ, and the disc of the last ventral segment more convex.

## ARRHIPIS.

*Arrhipis*, de Bonvouloir, Mon. des Eucnémides, p. 627 (1870).

This genus is closely related to *Microrhagus*, but has no well-defined depression for the antennæ along the inner side of the propleuræ. The two species heretofore known from Mexico and the Antilles have the prosternal sutures entirely obliterated; a third, from the island of Kaioa, north of Batchian, has well-marked sutures.

### 1. **Arrhipis subacuta.**

*Hylochares subacutus*, Guérin, Ann. Soc. Ent. Fr. 1843, p. 176[1].
*Arrhipis subacuta*, de Bonv. Mon. p. 628, t. 30. fig. 8[2].
*Eucnemis senegalensis*, Cast. in Silberm. Rev. Ent. iii. p. 174[3].

*Hab.* MEXICO[1], Toxpam[2], Playa Vicente[2], Santecomapan, Cosamaloapam[2], Teapa[2], Tehuantepec (*Sallé*); GUATEMALA, Panzos in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).—COLOMBIA[2]; GUIANA, Cayenne[2]; AMAZONS, Ega[2]; BRAZIL, Santa Catarina[2].

Castelnau[3] gave Senegal as the locality for his *E. senegalensis*, but this was, no doubt, in error.

## PTEROTARSUS.

*Pterotarsus*, Eschscholtz, in Thon's Ent. Archiv (1829), ii. pt. 1, p. 33; de Bonvouloir, Mon. des Eucnémides, p. 830.

This genus has been divided by de Bonvouloir into two subgenera—*Pterotarsus* proper with the surface more or less irregular or tuberculate, and *Lissothyreus* with even surface. Both are represented in the Central-American fauna.

### 1. **Pterotarsus humilis.**

*Pterotarsus humilis*, de Bonv. Mon. p. 837, t. 40. fig. 6[1].

*Hab.* NICARAGUA (*Sallé*[1]), Chontales (*Belt*).—GUIANA, Cayenne[1].

### 2. **Pterotarsus eschscholtzi.**

*Pterotarsus Eschscholtzii*, Cast. in Silberm. Rev. Ent. iii. p. 175[1]; Guérin, Ann. Soc. Ent. Fr. 1843, p. 196, t. 6. fig. 71[2]; de Bonv. Mon. p. 843, t. 41. fig. 1[3].

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).—BRAZIL[1 2 3].

### 3. **Pterotarsus rugosus.**

*Pterotarsus rugosus*, Blanch. Voyage de d'Orbigny, Ins. p. 146, t. 8. fig. 3[1]; Guérin, Ann. Soc. Ent. Fr. 1843, p. 196[2]; de Bonv. Mon. p. 845[3].

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—BOLIVIA[1 2 3].

The carina of the last ventral segment is longer and more distinct in the male.

### 4. **Pterotarsus histrio.**

*Pterotarsus histrio*, Guérin, Icon. Règne Anim. t. 12. fig. 2[1]; Latr. Ann. Soc. Ent. Fr. 1834, p. 132[2]; Guérin, Ann. Soc. Ent. Fr. 1843, p. 194[3]; Cast. Hist. Nat. Ins. Col. i. p. 227[4].
*Pterotarsus* (*Lissothyreus*) *histrio*, de Bonv. Mon. p. 847, t. 41. fig. 3[5].
*Pterotarsus brasiliensis*, Cast. in Silberm. Rev. Ent. iii. p. 174[6].
*Pterotarsus tuberculatus*, Lucas, in Cast. Expéd. dans l'Amér. du Sud, iii. p. 69[7].

*Hab.* GUATEMALA, San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA, Bogota[5]; GUIANA, Cayenne[5]; AMAZONS[5 7]; BRAZIL[1 2 3 4 5 6].

An extremely variable species in its coloration. The ground-colour is a pale orange-yellow, the head with a median black spot, the elytra with a broad black band at the base, often interrupted at the suture, a band one third from the apex, also often interrupted. This is the usual form, many departures from which are described by de Bonvouloir.

#### Var. **inornatus.**

Colour entirely pale orange-yellow, without spots or bands; basal joints of the antennæ black, the rami of the following joints piceous.

*Hab.* NICARAGUA, Chontales (*Belt*).

## THYLACOSTERNUS.

*Thylacosternus*, de Bonvouloir, Mon. des Eucnémides, p. 855 (1870).

The species of this genus have a peculiar facies, owing to their elongate parallel form, recalling *Hylecœtus*.

### 1. Thylacosternus rubricollis.

*Thylacosternus rubricollis*, de Bonv. Mon. p. 863 [1].

*Hab.* Mexico, Cordova (*Sallé* [1]), Teapa in Tabasco (*H. H. Smith*).

Black; thorax, middle of the metasternum, and femora pale orange-yellow; elytra striate at the base.

### 2. Thylacosternus bifasciatus.

*Thylacosternus bifasciatus*, de Bonv. Mon. p. 869 [1].

*Hab.* Mexico, Playa Vicente (*Sallé* [1]).

Similar to *T. rubricollis*, but with the occiput also pale; legs entirely yellowish; each elytron with a pale stripe from the humerus to the apex.

### 3. Thylacosternus nigrinus.

*Thylacosternus nigrinus*, de Bonv. Mon. p. 864, t. 42. fig. 2 [1].

*Hab.* Mexico [1], Cordova (*Sallé*).

Entirely black, except the anterior angles and underside of the thorax; legs yellowish, the tibiæ piceous.

### 4. Thylacosternus donatus. (Tab. X. fig. 25.)

Similar in form to *T. rubricollis*: antennæ black; head densely and coarsely punctate, vertex slightly concave; thorax broader than long, sides parallel, rounded at the front angles, disc moderately convex, closely punctate, median line slightly impressed from the base to the middle, where there is a shallow fovea, a vague transverse depression at the middle of the declivity, colour reddish-yellow, with two quadrate piceous spots, the anterior large, contiguous to the apex, the other smaller, contiguous to the base, these separated at the central fovea, surface sparsely fulvo-pubescent; elytra striate, except at the apex, the striæ vague, but deeper at the base, intervals slightly convex, more distinctly near the base, densely punctate, somewhat roughly at the base, surface sparsely clothed with short, black, erect pubescence; body beneath, except the prothorax, black, moderately shining, abdomen closely punctate, cinereo-pubescent; legs piceous-black, the anterior and middle femora at the base and their coxæ yellowish, tarsi pale. Length 7·5 millim.

*Hab.* Mexico, Coahuila (*from my cab., Dr. Palmer*).

This species is evidently related to *T. pulchellus*, but with a differently impressed thorax and more distinctly striate elytra.

[N.B.—This page was published in November, 1890, and is now reprinted.—Edd.]

# Fam. ELATERIDÆ *.

In dealing with the Central-American species of Elateridæ, I follow in the main the classification of Dr. E. Candèze, who for forty years has made these insects his special study.

Any departures from his system will be mentioned as they occur, and all general remarks will be found in the 'Introduction' to this Volume.

## Group **AGRYPNINI.**

### ADELOCERA.

*Adelocera,* Latreille, Règne Anim. iv. p. 451 (1829); Candèze, Monogr. Elat. i. p. 47; Revis. Elat. p. 14.

Of the sixty-four described species of *Adelocera,* one half inhabit the New World, the genus ranging from high northern latitudes to the tropics. In the typical species (as in *Dilobitarsus*) the prosternal grooves are very deep throughout and extend nearly to the anterior coxal cavities, thus forming a complete channel for the reception of the antennæ when longitudinally extended backwards; but in the three new species here described these grooves are shorter (though longer than in *Lacon*) and do not receive the whole of the antennæ in repose. The antennæ are usually serrate in both sexes, but are sometimes pectinate in the male; in some species they are more thickly pilose on the inner edge in the males than in the females. In addition to the nine species here enumerated from within our limits, one other, the widely-distributed *A. modesta,* Boisd. (=*pruinosa* and *squalida,* Fairm.), is given by Candèze (Monogr. Elat. i. p. 72) as from Guatemala; but it is highly probable that there is some mistake about this locality †.

These insects are all found under the bark of trees, the more northern species beneath that of pines. Our species (two of which are known to me from description only) may be identified by the annexed table:—

Prosternal grooves extending almost to the anterior coxal cavities, entire, very deep throughout; antennæ serrate in both sexes, short.

Elytral punctures not forming distinct striæ.

Hind angles of the prothorax not carinate . . . . . *cæca.*

Hind angles of the prothorax carinate . . . . . *mixta.*

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* By G. C. Champion.

† In the Janson collection there are two specimens of this species labelled as from "Vera Cruz, Mexico, ex Laferté;" this statement equally requires confirmation.

Elytra distinctly punctate-striate, the punctures of the interstices finer than those of the striæ.
Prothorax tuberculate in the middle at the base; the prothorax and elytra rufous, with the disc partly black . . . . . *palliata.*
Prothorax not tuberculate in the middle at the base; the prothorax and elytra more obscurely coloured.
Body elongate.
Elytra subparallel in their basal half . . . . . *mexicana.*
Elytra narrowing from about the basal third . . . . . *pollinaria.*
Body not elongate; size small (8 millim.) . . . . . *massula.*
Prosternal grooves abbreviated; antennæ longer.
Antennæ serrate in both sexes.
Surface uniformly clothed with bluish-green scales . . . . . *viridis.*
Surface clothed with cinereous or fulvo-cinereous scales . . . . . *longicornis.*
Antennæ strongly pectinate in the male . . . . . *pectinicornis.*

## 1. Adelocera cæca.

*Adelocera cæca,* Cand. Revis. Elat. p. 18 [1].

*Hab.* Guatemala, Yzabal (*Sallé* [1]).

Described from a single example.

## 2. Adelocera mixta.

*Adelocera mixta,* Cand. Compt. rend. Soc. Ent. Belg. xxi. p. lii (Elat. nouv. ii. p. 5) [1].

"Nigra, subnitida, convexa, pilis squamiformibus brunneis argenteisque intermixtis vestita; prothorace latitudine longiore, convexo, punctato, angulis posticis acutis, divaricatis, carinatis; elytris dorso haud deplanatis, punctatis, leviter sulcatis, striis punctis destitutis; sulcis tarsalibus nullis.—Long. 16, lat. $4\frac{1}{3}$ millim."

*Hab.* Mexico [1].

Unknown to me. It appears to differ from *A. cæca* chiefly in the carinate hind angles of the thorax.

## 3. Adelocera palliata.

*Elater palliatus,* Latr. in Humb. et Bonpl. Obs. Zool. ii. p. 154, t. 16. fig. 3 [1].
*Adelocera palliata,* Cand. Revis. Elat. p. 29 [2].
*Adelocera chapuisii,* Cand. Monogr. Elat. i. p. 66, t. 1. fig. 5 [3].

*Hab.* Mexico [3] (*coll. Janson, ex Latreille*), Volcan de Jorullo [1]; Nicaragua, Chontales (*Belt, E. M. Janson*).—Colombia [2]; Ecuador, Balzar Mountains.

Of this fine species I have seen nine examples from within our limits—one from Mexico and eight from Nicaragua. The Mexican locality seems to require confirmation. The insect varies in colour, the black on the thorax and elytra being more extended in some specimens than in others.

### 4. **Adelocera mexicana.** (Tab. XI. fig. 1.)

*Adelocera mexicana,* Cand. Monogr. Elat. i. p. 70[1]; Revis. Elat. p. 31[2].

*Hab.* Mexico[1 2], Tres Marias Is., Ventanas in Durango (*Forrer*), Tuxtla (*Sallé*); Nicaragua, Chontales (*Belt, E. M. Janson*).

I have seen nine examples of this species. It varies in colour, the elytra sometimes having the suture broadly piceous to beyond the middle, and sometimes in addition a postmedian fascia of the same colour. The thorax always has a large piceous patch on the disc. The elytra usually have a distinct transverse postmedian fascia of brownish scales. A specimen from Chontales is figured.

### 5. **Adelocera pollinaria.** (Tab. XI. fig. 2.)

*Adelocera pollinaria,* Cand. Monogr. Elat. i. p. 68, t. 1. fig. 14[1]; Revis. Elat. p. 29[2].
*Adelocera adspersa,* Cand. Revis. Elat. p. 30[3].

*Hab.* Guatemala, Yzabal (*Sallé*[3]); Panama, Bugaba (*Champion*).—Amazons, Ega; Brazil[1 2].

Closely allied to *A. mexicana*, but differing from it in having the elytra more narrowed posteriorly, and the seriate punctures coarser and less approximate. The elytra sometimes have nearly the apical half piceous or brown. *A. adspersa*, the type of which we figure, differs in no way from similarly-coloured specimens of *A. pollinaria* from Brazil.

### 6. **Adelocera massula.**

*Adelocera massula,* Cand. Elat. Nouv. iii. p. 2[1].

"Brevis, compacta, brunnea, opaca, sparsim pallide pilosula; fronte antice impressa, rugosa; antennis brevis, crassiusculis; prothorace quadrato, crasso, dense et fortiter punctato; elytris brevibus, crassis, seriatim grosse punctatis, interstitiis punctulatis, tertio et quinto apice subelevatis.—Long. 8, lat. 2 millim."

*Hab.* Mexico[1].

Unknown to me. A small species approaching *A. mixta*, but with the elytra seriate-punctate *.

### 7. **Adelocera viridis.** (Tab. XI. fig. 3.)

Elongate, broad, moderately convex, black; above and beneath somewhat sparsely and uniformly clothed with closely appressed, small, bluish-green scales, which do not hide the sculpture. Head coarsely, confluently punctured, concave in the middle in front; antennæ finely pubescent, nearly reaching the base of the prothorax, with the joints from the third broadly flattened and serrate, 3–10 about as broad as long. Prothorax transversely convex, broader than long, deeply and rather broadly sulcate down the middle; the sides arcuate and converging anteriorly, moderately sinuate behind, the marginal carina visible from above, the hind angles prolonged backwards and moderately sharp; the entire surface coarsely, confluently

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* In Candèze's Cat. Méth. Elat. (pp. 13, 14) *A. massula* is entered twice, under each of his sections of the genus.

punctured. Scutellum coarsely punctured, rounded behind. Elytra nearly three times as long as the prothorax, broadly flattened on the disc, parallel to beyond the middle, and then arcuately narrowed to the apex; the surface closely, confusedly punctured, and with very shallow longitudinal grooves, the punctures much finer than on the prothorax and showing no tendency to a linear arrangement. Beneath very closely and (except on the prosternum) not very coarsely punctured; prosternal grooves very deep, open behind, abbreviated, reaching about two-thirds of the distance to the coxal cavities, the sutures sinuous posteriorly; the propleuræ not grooved.

Length 19½, breadth 6 millim. (♀.)

*Hab.* Mexico, Omilteme in Guerrero 8000 feet (*Champion*).

One specimen. This very distinct species is allied to *A. carbonaria*, Schr., and *A. sparsa*, Cand., but differs from both in the abbreviated and incomplete prosternal grooves; the antennæ are longer and more broadly serrate, the thorax is shorter and more convex, and the elytra are more elongate; the entire surface above and beneath is uniformly clothed with small bluish-green scales.

### 8. **Adelocera longicornis.** (Tab. XI. fig. 4, ♂.)

Elongate, rather narrow, moderately convex; ferruginous or obscure ferruginous, in some specimens (♀) the head, elytra, under surface, and a large discoidal patch on the prothorax pitchy black, and the hind angles of the prothorax testaceous or rufo-testaceous; above and beneath rather sparsely clothed with appressed cinereous or fulvo-cinereous, piliform, acuminate scales, those on the prothorax sometimes (♀) more golden upon the sides and base and brown on the middle of the disc; the legs and antennæ pitchy-brown, sometimes partly ferruginous. Head broadly excavate in the middle in front, coarsely, closely punctate; antennæ about reaching the base of the prothorax in the female, more elongate and more pubescent on the inner edge in the male, the joints from the third flattened and moderately serrate, 3–10 longer and broad. Prothorax nearly as long as broad, convex, deeply canaliculate in the middle behind; the sides moderately arcuate, converging in front, and strongly sinuate behind; the hind angles acutely produced and divergent in the male, less prominent in the female; the entire surface rather coarsely, moderately closely punctate. Scutellum coarsely, closely punctate, acute behind. Elytra three times as long as the prothorax, feebly convex, flattened towards the suture, subparallel to about the middle and gradually narrowed thence to the apex; the surface closely, confusedly punctured, and sometimes with very shallow longitudinal grooves, the punctures finer than on the prothorax and showing no tendency to a linear arrangement. Beneath closely and (except on the prosternum) not very coarsely punctured; prosternal grooves very deep, abbreviated, about reaching two-thirds of the distance to the coxal cavities; the propleuræ not grooved.

Length 11¾–16, breadth 3½–4¾ millim. (♂ ♀.)

*Hab.* Guatemala, Capetillo (*Champion*).

Three males and two females. In this species the prosternal grooves are formed very much as in *A. viridis*, except that they are more abruptly limited posteriorly; the antennæ are unusually elongate, especially in the male. *A. longicornis* has somewhat the facies of a small *A. mexicana*, but it has very differently punctured elytra. The females I refer to *A. longicornis* differ from the males in colour, and also in the denser clothing of the thorax, but as the specimens are all from the same locality I do not hesitate to put them together.

### 9. **Adelocera pectinicornis.** (Tab XI. figg. 5, ♂; 5 *a*, profile; 5 *b*, antenna.)

♂. Moderately elongate, very convex, black, the base of the elytra and the epipleuræ ferruginous; the entire upper surface closely, confusedly, and rather coarsely punctured, thickly covered with coarse, appressed, oblong, acuminate scales, which are brilliantly golden upon the head, scutellum, and prothorax, except for an oval brown patch on the latter, and on the base of the elytra, those on the rest of the elytra being blackish-brown; the under surface more coarsely punctured than above, sparsely clothed with finer cinereous acuminate scales; the legs piceous, the tarsi obscure ferruginous. Antennæ nearly reaching the base of the prothorax, very strongly pectinate from the third joint, the latter sharply triangular, each joint thickly fringed on the inner side above and beneath with long flavo-cinereous hairs. Prothorax as long as broad; the sides feebly arcuate, converging from the middle forwards, sinuate behind; the hind angles acute, slightly divergent, obliquely carinate within; the disc strongly transversely convex, abruptly declivous on either side behind, and canaliculate from the base nearly to the apex. Scutellum declivous, vertical and acute behind, the posterior half concave. Elytra rather more than twice the length of the prothorax, parallel at the base and then somewhat rapidly narrowing to the apex, flattened on the disc, and with the suture swollen in front and raised considerably above the scutellum. Prosternum very broad and parallel, obliquely narrowed before the anterior coxal cavities; the grooves entire, very deep throughout, but not nearly reaching the cavities; the propleuræ not grooved.

Length 12, breadth $3\frac{3}{4}$ millim. (♂.)

*Hab.* NICARAGUA, Chontales (*Belt*).

One specimen. This beautiful insect is allied to the South-American *A. pectinata*, Cand., but differs from it in the shorter prosternal grooves, the non-tuberculate thorax, &c., and also in having the suture thickened in front and raised above the scutellum. The antennæ are formed very much as in *A. pectinata*, but they are more thickly fringed with hair. The scales on the head and thorax are so dense as to hide the sculpture.

## DILOBITARSUS.

*Dilobitarsus*, Latreille, Ann. Soc. Ent. Fr. 1834, p. 142; Candèze, Monogr. Elat. i. p. 75; Revis. Elat. p. 31.

Twenty-three species of this genus have been described, all but four of which are from Tropical America. They are found under bark. *D. cornutus*, Cand., from Tropical Africa, has the prosternal grooves abbreviated and open behind, in this respect resembling *Adelocera viridis*.

The three closely allied Central-American species may be separated thus:—

Marginal carina of the prothorax strongly flexuous . . . . . *inopinus*.
Marginal carina of the prothorax moderately flexous.
Prothorax not deeply sulcate down the middle . . . . . *bidens*.
Prothorax deeply sulcate down the middle . . . . . *eloini*.

### 1. **Dilobitarsus inopinus.** (Tab. XI. fig. 6.)

*Dilobitarsus inopinus*, Cand. Revis. Elat. p. 35 [1].

*Hab.* MEXICO, Jalapa and Misantla in Vera Cruz (*Höge*); GUATEMALA, Mirandilla (*Champion*); NICARAGUA (*coll. Janson* [1]).

We have received five specimens of this species. It differs from *D. bidens* in the strongly flexuous lateral carina of the thorax, a character not mentioned by Candèze.

### 2. **Dilobitarsus bidens.**

*Elater bidens*, Fabr. Syst. Eleuth. ii. p. 227 [1].
*Dilobitarsus bidens*, Cand. Monogr. Elat. i. p. 83, t. 1. fig. 6 [2]; Revis. Elat. p. 34 [3].
*Dilobitarsus tuberculatus*, Latr. Ann. Soc. Ent. Fr. 1834, p. 143 [4].

*Hab.* Central America [3]; Nicaragua (*Sallé, E. M. Janson*), Chontales (*Belt*).—South America [1], Colombia [2 3], Venezuela, Guiana [3], Brazil [2 3 4].

A widely distributed species in Tropical America. In some specimens the thorax and elytra are narrowly ferruginous at the base.

### 3. **Dilobitarsus eloini.** (Tab. XI. fig. 10.)

*Dilobitarsus eloini*, Cand. Revis. Elat. p. 35 [1].

*Hab.* Mexico (*coll. Janson*), Cordova (*Sallé*); Guatemala, Sinanja and Teleman in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Bugaba (*Champion*); Central America [1].

Smaller than *D. bidens*, the thorax deeply sulcate down the middle; the elytra depressed along the suture and with a well-marked fascia of flavo-cinereous hair-like acuminate scales before the apex. A specimen from Bugaba is figured.

## LACON.

*Lacon*, Castelnau, in Silb. Rev. Ent. iv. p. 11 (1836); Candèze, Monogr. Elat. i. p. 90; Revs. Elat. p. 42.

A very widely distributed genus, containing about 230 described species, twelve only of which are American, these ranging from the United States to Colombia. The American species greatly resemble those of China and Australia; they are closely allied and difficult to distinguish, the sculpture usually being completely hidden by an adherent earthy coating *. The males have a space on the fifth ventral segment, of variable size according to the species, almost smooth, or with the coarse punctures in great part obliterated, this space (when viewed under a strong lens) being covered with a very dense minute punctuation. These insects are found under stones, loose bark, &c. The following key (p. 264) will assist in the identification of the Central-American species.

* These insects can be readily cleaned for examination by immersion for a few minutes in caustic potash.

Body clothed with narrow acuminate scales.
Propleuræ more or less distinctly grooved for the reception of the anterior tarsi.
Hind angles of the prothorax subrectangular . . . . . *curtus.*
Hind angles of the prothorax obliquely truncate.
Form more or less elongate.
Propleural grooves shallow; fifth ventral segment with a large smooth space in ♂ . . . . . *tuspanensis.*
Propleural grooves deeper; fifth ventral segment with a small smooth space in ♂ . . . . . *suillus.*
Form short, broad . . . . . *brevis.*
Propleuræ not grooved for the reception of the anterior tarsi.
Hind angles of the prothorax rectangular . . . . . *truquii.*
Hind angles of the prothorax more or less prominent, obliquely truncate.
Prothorax moderately convex; elytral interstices coarsely punctured . *lezeleuci.*
Prothorax transversely gibbous; elytral interstices more finely punctured . . . . . *scarrosus.*
Hind angles of the prothorax prominent, almost rounded; head with a Y-shaped ridge . . . . . *calamitosus.*
Body clothed with long hair-like acuminate scales; propleuræ not grooved.
Elytra with distinct rows of punctures towards the sides; punctuation moderately coarse . . . . . *aristatus.*
Elytra without distinct rows of punctures towards the sides; punctuation very coarse . . . . . *paleatus.*

### 1. Lacon curtus.

*Adelocera curta,* Lec. Trans. Am. Phil. Soc. x. p. 491 [1].
*Lacon curtus,* Cand. Monogr. Elat. i. p. 156 [2]; Revis. Elat. p. 100 [3].

*Hab.* North America, Georgia [1 2], Texas [2].—Mexico [2 3] (*coll. Janson, ex Laferté*), Chihuahua city (*Höge*).

Five examples of this species have been received from Herr Höge, and there are two others labelled as from Mexico in the Laferté collection. *L. curtus* is very closely allied to *L. rectangularis*, Say, and apparently only differs from it in having the elytra more coarsely striate-punctate, the punctures nearly or quite as wide as the interstices. The male has a small oval space in the middle of the fifth ventral segment almost devoid of coarse punctures.

### 2. Lacon tuspanensis.

*Lacon tuspanensis,* Cand. Monogr. Elat. i. p. 157 [1]; Revis. Elat. p. 101 [2].

*Hab.* Mexico [1 2], Orizaba (*coll. Janson*), Playa Vicente, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Zapote (*Champion*).

This species is closely allied to the following, *L. suillus*, but may be distinguished from it by its more elongate shape, the sharper and more obliquely truncate hind angles of the thorax, and the very shallow propleural grooves. The male has a very large almost smooth space on the fifth ventral segment extending to the apex; in the corresponding sex of *L. suillus* this space is small, oval, and in the centre of the segment. In some specimens of *L. tuspanensis* the propleural grooves are almost obliterated.

### 3. **Lacon suillus.**

*Lacon suillus*, Cand. Monogr. Elat. i. p. 159[1]; Révis. Elat. p. 101[2].

*Hab.* Mexico[1 2], Orizaba (*coll. Janson*), Vera Cruz, Playa Vicente (*Sallé*), Jalapa (*Höge*); Guatemala, Chacoj in Vera Paz (*Champion*).

### 4. **Lacon brevis.** (Tab. XI. fig. 7.)

*Lacon brevis*, Cand. Monogr. Elat. i. p. 156[1]; Révis. Elat. p. 100[2].

*Hab.* Mexico, Yucatan[1 2] (*Sallé*), Temax in North Yucatan (*Gaumer*).

Closely allied to *L. suillus*, but broader and with the thorax a little more constricted behind. The male has a small, almost smooth, oval space in the centre of the fifth ventral segment; the apical margin of this segment is slightly thickened in both sexes.

### 5. **Lacon truquii.** (Tab. XI. fig. 8.)

*Lacon truquii*, Cand. Révis. Elat. p. 101[1].

*Hab.* Mexico[1] (*coll. Janson*), Sayula in Jalisco, Jalapa (*Höge*), Chilpancingo (*Höge, H. H. Smith*), Oaxaca, Tepansacualco (*Sallé*); Nicaragua, Chontales (*Belt*).

This species may be known from all the allied forms with ungrooved propleuræ by the rectangular hind angles of the thorax. The punctures on the interstices of the elytra become more or less muricate towards the apex. The fifth ventral segment has a transverse crenulated ridge before the apex in both sexes; in the male the median part of this segment is more sparsely punctured, the spaces between the punctures densely, very minutely punctate. A specimen from Jalapa is figured.

### 6. **Lacon lezeleuci.**

*Lacon lezeleucii*, Cand. Monogr. Elat. i. p. 158[1]; Révis. Elat. p. 101[2].

*Hab.* Mexico, Vera Cruz[1 2] (*Sallé*), Jalapa (*Höge*), Tepetlapa in Guerrero (*H. H. Smith*); Guatemala, San Gerónimo (*Champion*).

Candèze distinguishes this species from *L. scarrosus* chiefly by the crenulate margins of the thorax: the types of the two insects are before me and they do not exhibit any appreciable difference in this respect. *L. lezeleuci*, however, may be distinguished from *L. scarrosus* by the thorax being more feebly canaliculate behind and less convex (the

disc not transversely gibbous), and by the more coarsely punctured elytral interstices. The male has a small, almost smooth, oval space in the centre of the fifth ventral segment. In one of the two specimens from San Gerónimo the hind angles of the thorax are much less prominent than usual, the sides of the thorax being almost parallel behind.

### 7. **Lacon scarrosus.**

*Lacon scarrosus*, Cand. Monogr. Elat. i. p. 157[1]; Révis. Elat. p. 100[2].

*Hab.* Mexico[1 2], Panistlahuaca (*Sallé*), Teapa (*Höge*); British Honduras (*coll. Janson*); Guatemala[2] (*coll. Janson*), San Juan and Chacoj in Vera Paz, Dueñas, Capetillo, Zapote (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica (*coll. Janson*), Irazu (*Rogers*).

This species, like *L. tuspanensis*, &c., has the thorax transversely gibbous about the middle, and deeply canaliculate and foveate behind. The punctures of the elytral interstices are much finer than those of the striæ, becoming still finer towards the apex. The male has a moderately large cordate or subtriangular smooth space on the fifth ventral segment.

### 8. **Lacon calamitosus.**

*Lacon calamitosus*, Cand. Révis. Elat. p. 100[1].

*Hab.* Mexico, Oaxaca[1], Playa Vicente (*Sallé*), Teapa in Tabasco (*coll. Janson*); Guatemala, Capetillo (*Rodriguez*).

I have only seen three examples of this species. It differs from *L. lezeleuci* and *L. scarrosus* chiefly in the **Y**-shaped ridge upon the head, and in the more rounded hind angles of the thorax. The male has a transverse sparsely punctured space in the middle of the fifth ventral segment; the apical margin of this segment is considerably thickened in both sexes. The locality given by Candèze[1] is "Oaxaca," but the type in the Sallé collection is labelled Playa Vicente.

### 9. **Lacon aristatus.**

Elongate, pitchy-brown or piceous, the hind angles of the prothorax sometimes obscure testaceous, thickly clothed with cinereous or flavo-cinereous piliform acuminate scales, some of which are semierect on the elytra; the oral organs, antennæ, and legs obscure rufo-testaceous. Head coarsely, closely punctate, broadly depressed in the middle in front. Prothorax a little broader than long, convex, transversely gibbous about the middle, rather deeply canaliculate posteriorly and also longitudinally depressed on either side midway between this and the margin; the sides obliquely converging in front, rounded about the middle, and moderately sinuate behind; the anterior angles prominent; the hind angles obliquely truncate; the surface closely, coarsely punctate. Scutellum coarsely punctured. Elytra elongate, as wide as the prothorax at the base, narrowing from about the middle, moderately coarsely, closely, confusedly punctate, with rows of coarser and deeper punctures towards the sides and apex. Beneath coarsely, very closely punctate; propleuræ without distinct grooves for the reception of the anterior tarsi; the fifth ventral segment with a transverse fold at the apex.

♂. Fifth ventral segment, except at the base and sides, very sparsely impressed with moderately coarse punctures, the interspaces exceedingly minutely and densely punctate.

Length 9–13, breadth 3–4 millim. (♂ ♀.)

*Hab.* Mexico, Vera Cruz (*coll. Janson, ex Laferté*); Guatemala (*coll. Janson*); Costa Rica (*coll. Janson, Van Patten*), Caché (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This species may be distinguished from all the allied forms, the following excepted, by its much longer acuminate scales, some of which are semierect on the elytra. The elytra are confusedly punctured, the striæ only visible towards the sides and apex. The fifth ventral segment is almost smooth in the male, the minute interstitial punctuation being only visible under a strong lens. Examples of this insect have been collected in abundance in Costa Rica and Chiriqui. Specimens of this and the following species have been returned to me by Dr. Candèze as unknown to him.

### 10. **Lacon paleatus.** (Tab. XI. fig. 9.)

Elongate, rather broad, pitchy-brown, thickly clothed with very long fulvo-cinereous piliform acuminate scales, some of which are semierect on the elytra; the oral organs, antennæ, and legs obscure rufo-testaceous. Head coarsely, closely punctate, broadly depressed in the middle in front. Prothorax broader than long, convex, abruptly transversely gibbous about the middle, deeply canaliculate posteriorly and also longitudinally depressed on either side midway between this and the margin; the sides obliquely converging in front, rounded about the middle, and moderately sinuate behind; the anterior angles prominent; the hind angles obliquely truncate; the surface closely, coarsely punctate. Scutellum coarsely punctured. Elytra closely, coarsely, confusedly punctured, the punctures becoming exceedingly coarse and crowded towards the sides, the striæ distinct at the apex only. Beneath closely, very coarsely punctate; propleuræ without distinct grooves for the reception of the anterior tarsi; the fifth ventral segment with a transverse fold at the apex.

♂. Fifth ventral segment with a broad oval space extending to the apex very sparsely impressed with moderately coarse punctures, the interspaces exceedingly minutely and densely punctate.

Length $11\frac{3}{4}$–$13\frac{1}{2}$, breadth $3\frac{3}{4}$–$4\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Six examples. This insect closely resembles *L. aristatus*; but differs from it in the longer piliform scales of the upper surface and the more coarsely punctured elytra, the punctures becoming exceedingly coarse and crowded at the sides and confused with those of the striæ; the smooth space on the fifth ventral segment in the male is also less extended, not occupying nearly the whole of the surface as in *L. aristatus*.

## MERISTHUS.

*Meristhus*, Candèze, Monogr. Elat. i. p. 162 (1857); Révis. Elat. p. 102.

A genus of very wide distribution, containing ten described species, three of which inhabit the New World, these ranging from Texas to the Amazons; one of them possesses an extraordinary geographical distribution. Their habits, so far as I have been able to observe, are like those of *Cryptohypnus*; that is to say, they live under

stones upon the sandy banks of streams. Like *Lacon*, they usually have the surface of the body completely encrusted with an adherent earthy coating, in addition to the coarse scales with which they are clothed; and till this coating is removed the sculpture is disguised or invisible. Most of the published descriptions of the various species have been made from dirty specimens, and they are therefore very imperfect. The scaly clothing extends to the upper surface of the basal joint of the antennæ, and sometimes to the outer edge of the tibiæ also. Our three species may be separated as follows:—

Prothorax with granular elevations, the interspaces finely shagreened; scutellum very sharply carinate . . . . . *cristatus*.

Prothorax simply punctured, without granular elevations; scutellum finely carinate.

Elytra moderately long; scales small (about 25 in sutural row) . . . . . *scobinula*.

Elytra short and more ovate; scales longer and stouter (about 18 in sutural row); punctures coarser; interstices narrower, smoother, and more shining . . . *squamiger*.

## 1. **Meristhus cristatus.**

*Meristhus cristatus*, Horn, Trans. Am. Ent. Soc. iii. p. 299, t. 4. fig. 2 (1871)[1].

*Hab.* North America, Cape San Lucas, Lower California[1], Texas (*coll. Janson, ex Horn*).—Mexico, Presidio in Durango (*Forrer*).

Dr. Horn's description of *M. cristatus* must have been made from dirty specimens, as he has omitted to mention an important character, viz. the presence of smooth granular elevations upon the thorax, which are distinctly visible between the scales. The elytra have rows of coarse punctures, upon the inner edge of each of which is a smooth, prominent, granular elevation; the interstices are broader than the punctures, and each bears a series of short, stout, oblong whitish scales. The scutellum is very sharply carinate. The Mexican specimen is piceous in colour, the thorax with the anterior margin and hind angles, and the elytra with the sides and suture anteriorly, and a round spot on the disc near the apex, indeterminately rufo-testaceous; the whitish scales form a distinct patch on either side of the base of the thorax and also on the elytra at the base. Two specimens of *M. cristatus*, from Texas, are contained in the Janson collection.

## 2. **Meristhus scobinula.** (Tab. XI. fig. 12.)

*Meristhus scobinula*, Cand. Monogr. Elat. i. p. 164, t. 2. fig. 26[1]; Révis. Elat. p. 104[2].

*Meristhus setarius*, Chevr. Ann. Soc. Ent. Fr. 1867, p. 596[3].

*Meristhus texanus*, Horn, Trans. Am. Ent. Soc. iii. p. 300, t. 4. fig. 1 (1871)[4].

*Hab.* North America, Texas[4].—Mexico[1 2], Teapa in Tabasco (*coll. Janson*); Guatemala, El Puente (*Sallé*), Chacoj in Vera Paz, Guatemala city, Rio Naranjo (*Champion*).—Colombia; Cuba[3].—China[1 2] (*Mus. Brit. & coll. Janson, ex Bakewell*), Hong Kong (*J. J. Walker*).

I have carefully compared thoroughly cleaned specimens from Texas and Central

America with others from Hong Kong and fail to find the slightest difference between them. Mr. Walker's Chinese specimens were found in dry sandy places, under stones. The head and thorax are densely, moderately finely punctate, the head deeply canaliculate; the scutellum is finely longitudinally carinate; the elytra are moderately long, and have rows of coarse punctures separated by narrow interspaces, the latter each with a series of rather small blunt scales, each of which is inserted close to a very minute smooth granular elevation.

This insect has been collected in plenty by myself in Guatemala; it varies greatly in size ($2\frac{1}{4}$–$3\frac{1}{8}$ millim.) and also in colour. An example from Capetillo is figured.

### 3. **Meristhus squamiger.** (Tab. XI. fig. 14.)

Oblong-ovate, convex, obscure testaceous, ferruginous, or pitchy brown, the elytra sometimes with a patch at the base and a large rounded spot beyond the middle lighter in colour; the upper surface somewhat thickly clothed with rather long, coarse, semierect, yellowish scales, which are blunt at the tip and serially arranged on the elytra; the oral organs, legs, and antennæ flavo-testaceous; the under surface clothed with small appressed yellowish scales. Head closely, rather finely punctate, the vertex deeply canaliculate; antennæ short, joint 3 very small, shorter than 2, 4–10 short and moderately serrate, 11 obliquely emarginate on the outer side beyond the middle. Prothorax subquadrate, transversely convex; the sides abruptly constricted in front, rounded at the middle, and sinuous and slightly converging behind; the anterior angles acutely produced in front; the hind angles obliquely truncate, the outer angle subrectangular; the disc finely canaliculate, the channel becoming deeper at the base; the surface very closely, rather finely punctate. Scutellum finely longitudinally carinate. Elytra short, about one-half longer than the prothorax, oval, convex, widest at one-third from the base, with closely-packed rows of coarse deep punctures; the interstices very narrow, shining, and almost smooth, each bearing a series of coarse, semierect scales, each of which is inserted near a minute smooth granular elevation; the humeri obtuse. Beneath coarsely, closely punctate; propleuræ with deep oblique grooves for the reception of the anterior tarsi. Tibiæ slender at the apex, fringed on the outer edge with piliform scales, which are blunt at the tip.

Length $1\frac{3}{4}$–$2\frac{1}{4}$, breadth $\frac{3}{4}$–1 millim.

*Hab.* Mexico, Teapa in Tabasco (*coll. Janson*); Guatemala, San Gerónimo, Capetillo, Dueñas, Guatemala city (*Champion*).—Amazons, Santarem.

Found in plenty by myself in Guatemala, upon the sandy banks of streams and also on the wing towards evening. Smaller and more convex than *M. scobinula*; the upper surface clothed with much coarser scales; the elytra less elongate, more oval, still more coarsely seriate-punctate, the interstices shining and almost smooth, the scales much fewer in number. An example from Dueñas is figured.

## Group **ALAINI.**

## ALAUS.

*Alaus*, Eschscholtz, Thon's Archiv, ii. 1, p. 33 (1829); Candèze, Monogr. Elat. i. p. 211; Révis. Elat. p. 117.

*Calais*, Castelnau, in Silb. Rev. Ent. iv. p. 9 (1836); Candèze, Monogr. Elat. i. p. 239.

A genus containing some of the finest known forms of Elateridæ. Of the 116 described species, thirteen only are American. The American species chiefly differ from those of

the Old World in the absence of propleural grooves for the reception of the antennæ, and were at one time separated by Candèze under the name *Calais*. The North-American species are of large size and have an ocellated spot on either side of the thorax; one of these extends into Mexico. Our three other species, of each of which I have only seen a single example, are of a South-American type. In some specimens of various species the mesosternal suture is almost or quite obliterated, and on this account the genus *Alaus* is placed by Leconte and Horn in their Tribe "Chalcolepidiini."

Prothorax with an ocellated spot on either side; size very large . . . . . *lusciosus.*
Prothorax without ocellated spots; size smaller.
  Elytra long and subparallel; upper surface with whitish scales, variegated with brown . . . . . *plebejus.*
  Elytra shorter and narrowing almost from the base.
    Upper surface black, variegated with blackish-brown and white scales; suture not carinate at the base . . . . . *nietoi.*
    Upper surface in great part ferruginous, uniformly clothed with minute golden-green scales; suture strongly carinate at the base . . . . . *suturalis.*

### 1. **Alaus lusciosus.**

*Elater lusciosus,* Hope, in Griff. Anim. Kingd. i. p. 363, t. 31. fig. 5 [1].
*Alaus lusciosus,* Cand. Révis. Elat. p. 153 [2].
*Alaus gorgops,* Lec. Journ. Acad. Phil. 2nd ser. iv. p. 35 (1858) [3].

*Hab.* North America, Kansas [3], South-east United States [2], Texas.—Mexico [1] (*Sallé, ex coll. Sturm; coll. Janson*).

I have seen six specimens of this species from Mexico, not one of which is ticketed with any definite locality. *A. lusciosus* is probably nothing more than a variety of *A. oculatus,* Linn.

### 2. **Alaus plebejus.** (Tab. XI. fig. 11, ♀.)

*Alaus plebejus,* Cand. Révis. Elat. p. 152 [1].

*Hab.* Nicaragua, Chontales (*Belt*).—South America, Cayenne [1].

One female specimen from Chontales, differing from the type in having the thorax and elytra less distinctly variegate with brown scales.

### 3. **Alaus nietoi.** (Tab. XI. fig. 15, ♀.)

*Calais nietoi,* Sallé, Rev. et Mag. Zool. 1873, p. 15, t. 9. figg. 4, 4*a* [1].
*Alaus nietoi,* Cand. Révis. Elat. p. 73 [2].

*Hab.* Mexico, Orizaba (*Sallé* [1 2]).

The type of this species, a female, is contained in our collection. It has the apex of the abdomen truncate and fimbriate.

### 4. **Alaus suturalis.** (Tab. XI. figg. 13, 13 *a*, ♀.)

Moderately elongate, black; the prothorax ferruginous, with the base and lateral margins very narrowly, and a narrow longitudinal median vitta not reaching the base, black; the elytra ferruginous, with the base and suture very narrowly, and also the apex, black; the upper surface thickly and uniformly clothed with minute golden-green scales; the pro-, meso-, and metapleuræ, and also the ventral segments at the sides, clothed with greenish scales; the antennæ with joints 4–11 thickly clothed with purplish-brown pubescence; the legs pitchy-brown. Head triangularly depressed in front, densely, minutely punctate, with scattered coarser punctures intermixed; antennæ moderately elongate, joints 2 and 3 small and very short, 3 acutely and obliquely produced on the inner side, 4–11 broadly and obliquely lamellate, 11 constricted beyond the middle. Prothorax nearly one-third longer than broad, convex, subparallel, the sides rounded in front and sinuate behind, the lateral margins thickened at the base, the hind angles acutely produced and divergent; the entire surface densely, minutely punctate, with scattered coarser punctures intermixed. Scutellum declivous, obtuse behind, almost smooth. Elytra not twice the length of the prothorax, narrowing from the base, bluntly rounded and divaricate at the apex, the sutural angles rather sharp; finely punctate-striate, the punctures not very closely placed, and becoming coarser and deeper towards the sides; the interstices feebly convex, densely, minutely punctate; the suture acutely raised in front; the disc flattened and declivous almost from the base. Beneath sparsely, finely punctate, the pleuræ densely punctured; the propleuræ not grooved; the fifth ventral segment truncate at the apex and thickly fringed with long hairs.

Length $13\frac{1}{2}$, breadth $3\frac{3}{4}$ millim. (♀.)

*Hab.* NICARAGUA, Chontales (*Belt*).

One worn specimen. Allied to *A. glaucus*, Cand., and *A. nietoi*, Sallé.

## HEMIRHIPUS.

*Hemirhipus*, Latreille, Règne Anim. iv. p. 454 (1829); Candèze, Monogr. Elat. i. p. 246; Révis. Elat. p. 153.

Thirteen species of *Hemirhipus* are enumerated by Candèze, all American, the genus ranging from New York to Uruguay; with two exceptions, all are tropical. In addition to the three species mentioned below, two others are given by Candèze from within our limits; these are *H. rojasi*, Cand., from Merida, Yucatan (probably in mistake for Merida, Venezuela), and *H. fairmairei*, Cand., from "Central America;" as regards the latter, all the specimens I have seen are labelled "New Granada," and we have no evidence of the occurrence of the insect so far north as Panama.

Scutellum vertical in front; metasternum not deeply sulcate . . . . . *bimaculatus.*
Scutellum declivous; metasternum very deeply sulcate.
  Elytra testaceous, with some oblong spots at the base, and three narrow zigzag fasciæ on the posterior half, brown or piceous . . . . . *fascicularis.*
  Elytra black, with some elongate streaks at the base, and a zigzag fascia beyond the middle, testaceous . . . . . *decorus.*

### 1. **Hemirhipus bimaculatus.** (Tab. XI. fig. 17, ♂.)

*Hemirhipus bimaculatus*, Cand. Monogr. Elat. i. p. 35[1]; Révis. Elat. p. 154[2].

*Hab.* MEXICO [1] [2].

The type of this species, a male, is still unique in the Janson collection.

### 2. **Hemirhipus fascicularis.**

*Elater fascicularis,* Fabr. Mant. Ins. i. p. 171[1]; Ent. Syst. i. 2, p. 216[2]; Oliv. Ent. ii. no. 31, p. 8, t. 5. fig. 56[3].

*Hemirhipus fascicularis,* Latr. Règne Anim. iv. p. 454[4]; Cand. Monogr. Elat. i. p. 252, t. 5. fig. 2[5]; Révis. Elat. p. 154[6]; Lec. Trans. Am. Phil. Soc. x. p. 485[7].

*Hemirhipus venosus,* Cast. in Silb. Rev. Ent. iv. p. 13[8].

*Hab.* North America, New York, Baltimore[7], Maryland, North Carolina[7], Texas[7].—Mexico[8], Temax in North Yucatan.—Amazons; Brazil[5].

We have received two specimens of this species from Yucatan.

### 3. **Hemirhipus decorus.** (Tab. XI. fig. 19, ♂.)

*Hemirhipus decorus,* Cand. Monogr. Elat. i. p. 254[1]; Révis. Elat. p. 155[2].

*Hab.* Mexico[1 2]; Nicaragua, Chontales (*E. M. Janson*).

There is a Nicaraguan specimen of this species in the Janson collection; it is of the male sex and is figured on our Plate.

## CHALCOLEPIS.

*Chalcolepis,* Candèze, Monogr. Elat. i. p. 244 (1857); Révis. Elat. p. 159.

This genus contains a single species, peculiar to Central and South America.

### 1. **Chalcolepis luczoti.** (Tab. XI. fig. 16.)

*Chalcolepis luczotii,* Cand. Monogr. Elat. i. p. 245[1]; Révis. Elat. p. 159[2].

*Hab.* Mexico (*coll. Janson*); Guatemala, Purula and Senahu in Vera Paz (*Champion*); Nicaragua (*Sallé*[2]), Chontales (*Belt, Janson*); Costa Rica (*Van Patten*); Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).—South America, Colombia[2], Cayenne[1].

Varies in the sculpture of the thorax and in the form of the scutellum; in some specimens the sides of the thorax are angulate before the middle. An example from Nicaragua is figured.

## Group **CHALCOLEPIDIINI.**

## CHALCOLEPIDIUS.

*Chalcolepidius,* Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829); Candèze, Monogr. Elat. i. p. 259.

This genus contains upwards of sixty described species, all American, ranging from the Southern United States to Chili and Uruguay; one species, the South-American *C. erythroloma,* Cand., has been introduced into the Sandwich Islands, and has been described under a separate name, *C. albertisi,* Cand. Thirty-two species are here enumerated from within our limits, more than half of which are exclusively Mexican. They may be conveniently grouped by the form of the scutellum, the grooving or not of the propleuræ, and the male characters. The surface in many species is clothed

with two very different forms of scales—one minute and usually opalescent or metallic, the other larger, more elongate, and opaque, white, luteous, or fulvous, these latter often forming a marginal vitta on the thorax and elytra; the larger scales seem to be loosely attached and easily abraded. Viewed under a microscope, with a $\frac{1}{2}$-inch objective, the large scales are strongly transversely strigose, as well as longitudinally striated, the small ones longitudinally striated only. Some of the species vary greatly in the colour of the scales, and in one, at least, *C. mexicanus*, the males have the whitish scales almost obliterated above. The elytra usually have the marginal carina more or less deflexed anteriorly, becoming indistinct or almost obsolete in front; but in several species (*C. desmaresti*, &c.) it is distinct to the base. The males of many of the species are of extraordinary rarity; they may always be known from the females by having the fifth ventral segment rounded at the apex, this segment being broadly truncate and ciliate in the females. In addition to this, other sexual characters are in most cases to be found in the clothing or armature of the tibiæ or tarsi, and sometimes in the form of the antennæ.

These insects form a characteristic feature in the fauna of the forest-region of Central and South America. They are found crawling on fallen decaying trees, in which the earlier stages are passed; some of the species, *C. lacordairei*, *C. exquisitus*, *C. silbermanni*, &c., are often rather abundant where they occur.

The metamorphoses of *C. approximatus* (*zonatus*, Dugès) have been described and figured by Dr. E. Dugès.

The following table is added to assist in the identification of the Central-American species; but it must be remembered that the males of *C. forreri*, *C. inops*, *C. murinus*, *C. jansoni*, *C. mniszechi*, *C. lenzi*, *C. behrensi*, and *C. tenuis* are unknown or undescribed, and that no specimens of either sex of *C. lenzi*, *C. behrensi*, *C. mniszechi*, and *C. inops* are available for examination :—

1. Scutellum horizontal, subtriangular or obcordate, usually more or less bilobed in front.
   - *a*. Antennæ serrate in both sexes; apical joint of each tarsus and the anterior, or the anterior and intermediate, tibiæ (except in *C. webbi*) ciliate in the ♂*.
     - *a'*. Propleuræ grooved or plicate in front for the reception of the basal joints of the antennæ.
       - *a''*. Antennæ with the third joint as long as the fourth.
         - *a'''*. Prothorax and elytra with a marginal band of fulvous, luteous, or whitish scales.
           - $a^4$. Scales on the epipleuræ and under surface similar.
             - $a^5$. Marginal bands on the prothorax extending to the base.
               - $a^6$. Elytra with a line of elongate fulvous or whitish scales on each of the striæ . . . . . *bonplandi*.

* In the species of which the males are known.

$b^6$. Elytra without a line of lighter scales on each of the striæ . *lafargei.*

$b^5$. Marginal bands on the prothorax not extending to the base, narrowed behind.

$c^6$. Elytra with a line of elongate white scales on each of the striæ, the white scales sometimes covering the whole of the surface, the interstices without minute darker scales. *rugatus.*

$d^6$. Elytra without a line of lighter scales on each of the striæ, the disc uniformly clothed with minute greenish or olivaceous scales . . . . . *eschscholtzi.*

$b^4$. Scales on the epipleuræ similar to those on the elytral margins.

$c^5$. Elytra punctate-striate, with at least the alternate interstices raised.

$e^6$. Hind angles of the prothorax extending beyond the humeri; elytral interstices subequal . . . . . *limbatus.*

$f^6$. Hind angles of the prothorax not extending beyond the humeri; alternate elytral interstices broader and more raised . . . . . *approximatus.*

$d^5$. Elytra very lightly striate-punctate, the interstices quite flat . *webbi.*

$b'''$. Prothorax and elytra without a marginal band of lighter scales.

$c^4$. Elytra with interstices equal, slightly raised; deeply punctate-striate.

$e^5$. Form elliptic, very broad; disc of the prothorax coarsely longitudinally wrinkled; scales variable in colour—usually blue. *lacordairei.*

$f^5$. Form oval, broad; disc of the prothorax smoother; scales variable in colour—usually golden-green or violaceous . . *exquisitus.*

$g^5$. Form oblong-oval; scales greenish . . . . . *virens.*

$d^4$. Alternate elytral interstices more or less raised.

$h^5$. Striæ rather deeply impressed, the punctures subapproximate.

$g^6$. Scales olive-brown.

$a^7$. Alternate interstices moderately costate . . . . . *silbermanni.*

$b^7$. Alternate interstices strongly costate . . . . . *morio.*

$h^6$. Scales slaty-blue . . . . . *pruinosus.*

$i^5$. Striæ almost obsolete, the punctures very fine and widely separated; scales olivaceous-green, purplish in certain lights . . . . . *forreri.*

$b''$. Antennæ with the third joint small, shorter than the fourth, in some species not much longer than the second.

$c'''$. Prothorax and elytra with a marginal band of fulvous, luteous, or whitish scales.

$e^4$. Marginal bands on the prothorax contiguous to the outer edge and extending to the base, widened behind; the scales on the under surface, like those on the margins, elongate, white . . *virginalis.*

$f^4$. Marginal bands on the prothorax extending obliquely from opposite the eyes to near the base, narrowed behind; the scales on the under surface minute, olivaceous or greenish . *angustatus.*

*d'''*. Prothorax and elytra without a marginal band of lighter scales; the elytral interstices equal.

*g*⁴. Prothorax dilated at the sides; elytral striæ distinctly punctured at the sides only . . . . . *inops.*

*h*⁴. Prothorax not dilated at the sides; elytral striæ distinctly punctured throughout . . . . . *murinus.*

*b'*. Propleuræ not grooved in front; antennæ with the third joint as long as the fourth; scales uniformly glaucous-green; sutural angles of the elytral sharply mucronate . . . . . *jansoni.*

*b*. Antennæ pectinate, and the tibiæ and tarsi simple, in the ♂; propleuræ not grooved in front; antennæ with the third joint very short . . . *boucardi.*

2. Scutellum declivous from about the middle forwards, obcordate; propleuræ not grooved in front; antennæ with the third joint shorter than the fourth; anterior and intermediate tibiæ abruptly widened on the inner side at the apex in the ♂ . . . . . *desmaresti.*

3. Scutellum tumid in the middle, declivous anteriorly, scarcely transverse . . *mniszechi.*

4. Scutellum strongly transverse; antennæ with the third joint very much shorter than the fourth; propleuræ not or shallowly grooved in front; anterior tibiæ denticulate or simple in the ♂ *.

*c'*. Form oval or oblong oval.

*c''*. Prothorax and elytra with a marginal band of whitish scales (obsolete in the ♂) . . . . . *mexicanus.*

*d''*. Prothorax and elytra without a marginal band of lighter scales.

*e'''*. Sides of the prothorax strongly sinuate behind, the hind angles abruptly divergent; elytral interstices equal.

*i*⁴. Surface of the prothorax uneven . . . . . *lenzi.*

*j*⁴. Surface of the prothorax even . . . . . *behrensi.*

*f'''*. Sides of the prothorax moderately or feebly sinuate behind, the hind angles not abruptly divergent.

*k*⁴. Elytral interstices subequal; sutural angles blunt or rectangular.

*j*⁵. Elytra narrowing from about the middle.

*i*⁶. Size very large; scales uniformly blue or green . . . . . *jekeli.*

*j*⁶. Size moderate; scales olivaceous-green, sometimes white along each of the striæ . . . . . *rodriguezi.*

*k*⁵. Elytra narrowing from the base.

*k*⁶. Interstices convex; punctures of the striæ fine . . . . . *attenuatus.*

*l*⁶. Interstices almost flat; punctures of the striæ rather coarse . *cuneatus.*

*l*⁴. Alternate elytral interstices broader and more convex; sutural angles sharp . . . . . *oxydatus.*

*d'*. Form elongate, narrow, subparallel; hind angles of the prothorax abruptly divergent.

*e''*. Elytra lightly punctate-striate, the interstices almost flat; scales of the upper surface rather coarse, those of the under surface white and elongate; propleuræ not grooved in front . . . . . *dugesi.*

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* In the species of which the males are known.

*f''*. Elytra deeply punctate-striate, the interstices convex; scales of the upper and under surfaces minute; propleuræ shallowly grooved anteriorly . . . . . *tenuis*.

## 1. Chalcolepidius bonplandi.

*Chalcolepidius bonplandii*, Guér. Rev. et Mag. Zool. vii. p. 17 [1]; Cand. Monogr. Elat. i. p. 278, t. 6. fig. 3 [2]; Révis. Elat. p. 166 [3]; Bull. Soc. Ent. Belg. 1886, p. lxxi [4].

*Chalcolepidius juani*, Cand. Ann. Soc. Ent. Belg. 1889, p. 79 [5].

*Hab.* MEXICO, Cosamaloapam in Vera Cruz (*Sallé*); BRITISH HONDURAS, Belize, Cayo (*Blancaneaux*); GUATEMALA [5] (*coll. Janson*), Panzos, Teleman, Chacoj, San Juan, Senahu, and Cubilguitz in Vera Paz (*Champion*), Coban (*Champion, Conradt*); NICARAGUA (*Sallé*), Chontales (*Belt, E. M. Janson*); COSTA RICA (*Sallé*).—COLOMBIA [1–4], Carthagena.

We have received a large number of specimens of this species; it is a common insect on the Atlantic slope of Guatemala and also at Chontales. *C. juani*, Cand., a specimen of which determined by the author is before me, is based upon abraded examples of *C. bonplandi*, with the marginal stripe of the thorax and elytra slightly paler than usual. The two forms were collected together by myself at San Juan in Vera Paz. I have seen five males, three in the Janson collection and two in our own. In one specimen from Chontales the scales on the dorsum are violaceous. This species differs from *C. rugatus* in having minute metallic scales on the dorsum of the thorax and on the elytral interstices (in *C. rugatus* and its variety *pistorius* the scales on these parts are elongate and white); the marginal stripe on the thorax is also broader, and is widened posteriorly. Worn specimens are scarcely distinguishable from *C. rugatus*.

## 2. Chalcolepidius lafargei. (Tab. XI. fig. 18, ♀.)

*Chalcolepidius lafargi*, Chevr. Col. Mex. Cent. ii. fasc. 8, no. 196 (Sept. 1835) [1]; Cand. Bull. Soc. Ent. Belg. 1886, p. lxxi [2].

*Chalcolepidius eschscholtzii*, var. *lafargei*, Cand. Monogr. Elat. i. p. 279 [3].

*Hab.* MEXICO [2] (*Sallé, ex coll. Sturm*), Tampico (*coll. Janson*), Tuspan [1] (*Sallé*), Jalapa (*Höge*).

A male from Jalapa is figured.

## 3. Chalcolepidius rugatus. (Tab. XI. figg. 20, ♀; 21, var. *pistorius*, ♂.)

*Chalcolepidius rugatus*, Cand. Monogr. Elat. i. p. 280 [1]; Révis. Elat. p. 167 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxii [3].

*Hab.* MEXICO [1], Chiapas [2 3] and Tabasco [2 3] (*Sallé*), Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS (*Dyson, in coll. Janson*), Cayo, Belize, R. Sarstoon, R. Hondo (*Blancaneaux*); GUATEMALA [2 3], Chiacam in Vera Paz (*Champion*).

*Var.* The marginal band of scales on the prothorax and elytra white.

*Chalcolepidius pistorius,* Cand. Bull. Soc. Ent. Belg. 1890, p. clxxxiv [4].

*Hab.* British Honduras [4] (*coll. Janson*), R. Sarstoon (*Blancaneaux*); Guatemala, Panzos, Teleman, Chacoj, and Sinanja in Vera Paz (*Champion*).

With a long series of specimens it is not possible to separate *C. pistorius* from *C. rugatus*. In freshly emerged examples the whole of the upper surface, including the convex elytral interstices, is densely, uniformly covered with elongate white scales. In typical *C. rugatus* the marginal stripe is fulvous or luteous, that of the thorax narrowing posteriorly; in our two specimens from Tabasco the marginal stripe is tawny-brown. The scales of the under surface are chocolate-brown. I have seen three males only—two collected by myself in the Polochic Valley, and one by Mr. Gaumer in Yucatan. We figure two examples: a female of the typical form, from Chiacam, and a male of the var. *pistorius*, from Panzos.

## 4. Chalcolepidus eschscholtzi.

*Chalcolepidius eschscholtzii,* Chevr. Coll. Mex. Cent. i. fasc. 1, no. 36 [1] (Jan. 1833); Cand. Monogr. Elat. i. p. 279, t. 5. fig. 8 [2]; Révis. Elat. p. 167 [3]; Bull. Soc. Ent. Belg. 1886, p. lxxi [4].

*Hab.* Mexico [2], El Chico in Vera Cruz (*Lesueur* [1]), Cordova (*Sallé*, *Höge*), Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*), Vera Cruz [3 4].

This variable species is apparently confined to the Atlantic slope of Mexico; *C. lafargei* is probably an extreme variety of it. The marginal stripe in *C. eschscholtzi* is usually more or less luteous or fulvous, but is sometimes tawny or almost black; in *C. lafargei* it is white. The thoracic stripe is less narrowed posteriorly in *C. lafargei* and extends to the base. The dorsum is entirely clothed with minute metallic scales, which vary greatly in colour. The scales of the under surface are greenish or olivaceous, as in *C. bonplandi.* We have received many specimens of both *C. eschscholtzi* and *C. lafargei*, including four males of the former and two of the latter.

## 5. Chalcolepidius limbatus.

*Chalcolepidius limbatus,* Eschsch. in Thon's Archiv, ii. 1, p. 33 [1]; Er. Zeitschr. für Ent. iii. p. 80 [2]; Cand. Monogr. Elat. i. p. 272 [3]; Révis. Elat. p. 164 [4]; Bull. Soc. Ent. Belg. 1886, p. lxxi [5].

*Elater porcatus,* Oliv. Ent. ii. no. 31, p. 14, t. 7. fig. 74 [6]; Drury, Exot. Ins. iii. p. 70, t. 47. fig. 6 [7].

*Elater striatus,* Fabr. Syst. Eleuth. ii. p. 226 [8].

*Chalcolepidius angustior,* Dej. Cat. 3rd edit. p. 100 [9].

*Hab.* Mexico [5 9] (*coll. Janson, ex Dejean*); Central America, Bay of Honduras [7].—South America [4 5], Colombia [2 3 6], Venezuela, Guiana [3 8], Brazil [2 3 5], Uruguay [4].

There is an abraded male example of this species in the Janson collection, from that

of Dejean, labelled as from Mexico. The synonymy, that referring to Dejean excepted, is given on the authority of Candèze. The figure and description of *E. porcatus*, Drury, from the Bay of Honduras, would apply equally well to *C. bonplandi*, Guér., from which the present species chiefly differs in having the epipleuræ clothed with elongate luteous scales and the marginal carina of the elytra more deflexed anteriorly.

### 6. **Chalcolepidius approximatus.** (Tab. XI. fig. 22, ♀.)

*Chalcolepidius approximatus*, Er. Zeitschr. für Ent. iii. p. 82 [1]; Cand. Monogr. Elat. i. p. 275 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxi [3].

*Chalcolepidius zonatus*, var. *b*, Cand. Révis. Elat. p. 164 [4].

*Chalcolepidius zonatus*, Dugès, Ann. Soc. Ent. Belg. 1885, 2, p. 32, t. 2. fig. 35 * (♂) [5].

*Hab.* MEXICO [1 2 3] (*Sallé, ex coll. Sturm*), Zapotlan in Colima (*Höge*), Matamoros Izucar (*Sallé, Höge*), Puebla (*Sallé* [4]; *coll. Janson*), Cuernavaca in Morelos (*Höge*), Venta de Zopilote in Guerrero (*H. H. Smith*), Tupataro in Guanajuato (*Dugès* [5]).

This species, of which I have seen nine females and five males, is very closely allied to the South-American *C. zonatus*, Eschsch.; but differs from it in having the head more deeply excavate, the thorax more parallel, with the hind angles less divergent, less thickened, and more acute, the elytra with the ninth interstice costate and the apices more rounded, and the minute scales of the upper and under surfaces more obscurely coloured. In both species the epipleuræ are clothed with elongate white scales †; the male characters are similar. In the Colima specimens the elongate white scales on the elytral striæ are almost obliterated on the disc. The white marginal stripe of the elytra is always divided down the middle by the raised ninth interstice. In one of the two examples from Cuernavaca the propleuræ have each a longitudinal band of white scales in the centre. The metamorphoses of this insect have been fully described by Dr. E. Dugès [5], who gives numerous figures of the larva and pupa (*op. cit.* figg. 16–34). A female from Cuernavaca is figured.

### 7. **Chalcolepidius webbi.** (Tab. XI. fig. 23, ♀.)

*Chalcolepidius webbii*, Lec. Proc. Acad. Phil. vii. p. 223 (1854) [1]; Cand. Monogr. Elat. i. p. 292 [2]; Révis. Elat. p. 164 [3]; Bull. Soc. Ent. Belg. 1886, p. lxxiv [4].

*Chalcolepidius apacheanus*, Casey, Ann. New York Acad. vi. p. 16 [5].

*Hab.* NORTH AMERICA, California (*coll. Janson, ex Horn*), between San Diego [2–4] and El Paso [1], Arizona [5].—MEXICO, Chihuahua city (*Höge*).

We have received three female specimens of this insect from Chihuahua, and there is a Californian specimen of the same sex in the Janson collection.

* This figure is incorrect, the anterior and intermediate tibiæ only being ciliate in the male.

† In Candèze's table (Bull. Soc. Ent. Belg. 1886, p. lxvii) the species should follow *C. zonatus*, in sect. *dd.*

*C. apacheanus*, Casey, is based upon abraded examples of this species; our Chihuahua specimens are in similar condition, owing to immersion in alcohol.

### 8. **Chalcolepidius lacordairei.** (Tab. XII. fig. 1, var., ♀.)

*Chalcolepidius lacordairei*, Cand. Monogr. Elat. i. p. 281, t. 5. figg. 6, 6 *a–g* [1]; Révis. Elat. p. 167 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxiii [3].

*Hab.* MEXICO [1] (*coll. Janson*), Cerro de Plumas (*Höge*), Dos Arroyos in Guerrero 1000 feet (*H. H. Smith*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA (*Sallé*; *coll. Janson*), El Tumbador, Paraiso, El Reposo, Las Mercedes, Cerro Zunil, San Isidro, Mirandilla, San Cayetano, Zapote, San Gerónimo (*Champion*), Capetillo (*Champion*, *Rodriguez*), Panzos (*Conradt*); NICARAGUA, Chontales (*Belt*), San Lorenzo (*E. M. Janson*); COSTA RICA (*Pittier*, *in Mus. Brit.*).

A common insect in the forest-region of the Pacific slope of Guatemala, also occurring sparingly in Vera Paz. Candèze gives [2] San Diego, California, as a locality, but this requires confirmation; his southern localities refer to the subsequently described *C. exquisitus*. I have seen about ninety specimens of *C. lacordairei*, five only of which are males; the ciliate tarsus and tibia in this sex is shown by Candèze, fig. 6 *f*.

The Mexican specimens in our collection are very dark in colour, those from Cerro de Plumas resembling the variety mentioned by Candèze [2] as from California; the latter have the scales brown on the dorsum and violaceous at the sides and beneath; the single specimen from Guererro has the scales olive-grey on the back and bronze at the sides. We figure a variety from Dos Arroyos in Western Mexico.

### 9. **Chalcolepidius exquisitus.** (Tab. XI. fig. 24, ♂.)

*Chalcolepidius exquisitus*, Cand. Bull. Soc. Ent. Belg. 1886, p. lxviii [1]; Ann. Soc. Ent. Belg. 1889, p. 79 [2].

*Hab.* NICARAGUA, Chontales (*Richardson*); COSTA RICA (*coll. Janson*, *Sallé*, *Van Patten*, *Pittier*), Irazu (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui 2000 to 4000 feet (*Champion*), Taboga I. (*J. J. Walker*), Obispo (*Salvin*), Veragua [2].

This species, or variety, replaces *C. lacordairei* in the southern portions of Central America, the two insects apparently occurring together in Costa Rica and Nicaragua *. All the specimens found by myself in the State of Panama, upwards of sixty, are clothed with greenish scales—the colour varying to golden-green or olivaceous-green; in some of those from Nicaragua and Costa Rica the scales are bluish or violaceous, these specimens resembling *C. lacordairei* in colour. The thorax, as noted by Candèze, is usually much smoother than in *C. lacordairei*, but in some of the Panama specimens it is coarsely longitudinally wrinkled on the disc; the elytra are distinctly more

* There are specimens of this species in the British Museum, and also in the Janson collection, labelled "Guatemala (*Scherzer*)"; they are probably from Costa Rica.

attenuate behind. Upwards of eighty specimens of *C. exquisitus* are before me, only three of which are males; it varies in length from 25–40 millim., and in breadth from 9–16 millim. In one specimen from Bugaba the elytra have a line of elongate white scales near the margin in front. *C. exquisitus* is an abundant insect in the forest-region of Chiriqui.

A male from the Volcan de Chiriqui is figured.

### 10. **Chalcolepidius virens.**

*Chalcolepidius porcatus* (Linn.), Cand. Monogr. Elat. i. p. 270 [1]; Révis. Elat. p. 163 (part.)[2].
*Elater virens*, Fabr. Mant. Ins. i. p. 172 [3]; Oliv. Ent. ii. no. 31, p. 15, t. 2. fig. 19, t. 5. fig. 55 [4].
*Chalcolepidius virens*, Cand. Elat. Nouv. iii. p. 22 [5]; Bull. Soc. Ent. Belg. 1886, p. lxxiii [6].

*Hab.* Mexico [2] (*coll. Janson*); Panama, Chiriqui (*Ribbe*).—South America [1 2 3 6] to Brazil.

Candèze in his "Monograph" treats this insect as a variety of the variable *C. porcatus*, Linn.; but he subsequently separated it as distinct, chiefly on account of the unicolorous minute scales of the elytra. In *C. porcatus* and the closely allied *C. aurulentus*, Cand., the elytral striæ have each a line of whitish elongate scales, the interstices with minute metallic scales. I have seen three (♀) specimens only of *C. virens* from within our limits.

### 11. **Chalcolepidius silbermanni.** (Tab. XI. fig. 25, ♀.)

*Chalcolepidius silbermanni*, Chevr. Col. Mex. Cent. ii. fasc. 8, no. 197 (Sept. 1835) [1]; Cand. Monogr. Elat. i. p. 275 [2]; Révis. Elat. p. 165 [3]; Bull. Soc. Ent. Belg. 1886, p. lxxii [4].
*Chalcolepidius sericeus*, Er. Zeitschr. für Ent. iii. p. 83 (1841) [5].
*Chalcolepidius sulciger*, Dej. Cat. 3rd edit. p. 100 [6].

*Hab.* Mexico [2 3 4 6], Ciudad in Durango (*Forrer*), Ventanas in Durango, Jalapa, Oaxaca (*Höge*), Amula, Omilteme, and Xautipa in Guerrero (*H. H. Smith*), Santecomapan, Vera Cruz [1], Juquila, Tehuantepec, Chiapas (*Sallé*), Cordova (*Sallé*, *Höge*), Temax in North Yucatan (*Höge*), Tuspan [1]; British Honduras (*Blancaneaux*); Guatemala, Panzos, Chacoj, San Juan, Panima, and San Gerónimo in Vera Paz, El Reposo, Pantaleon, Torola (*Champion*); Nicaragua, Chontales (*Belt*, *E. M. Janson*, *Richardson*); Costa Rica (*Sallé*); Panama, Volcan de Chiriqui, David (*Champion*), Panama city (*J. J. Walker*), Taboga I. (*Champion*, *J. J. Walker*), Obispo (*Salvin*).—Colombia [3 4]; Venezuela [4], La Guayra [5].

This is the commonest species of the genus in Central America, extending northwards to Durango; it reaches an altitude of 8000 feet in some parts of Mexico. In Guatemala the insect inhabits both the Atlantic and Pacific slopes, from the low hot country to an elevation of 3000 feet. *C. silbermanni* varies greatly in size—from

19–43 millim. in length, and from 6–14 millim. in breadth,—also in the sculpture of the thorax, some specimens having the disc of the latter very coarsely longitudinally wrinkled. The anterior and intermediate tibiæ, and the apical joint of each tarsus, are ciliate in the male, characters not mentioned by Candèze or Erichson. In one specimen from Juquila the scales on the upper and under surfaces are tinged with violaceous. I have seen upwards of one hundred females, and thirteen males, of *C. silbermanni*.

A female from Pantaleon is figured.

### 12. **Chalcolepidius morio.**

*Chalcolepidius morio*, Cand. Monogr. Elat. i. p. 284 [1]; Révis. Elat. p. 167 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxiii [3].

*Hab.* Mexico [1] (*coll. Janson, ex Laferté; Sallé, ex Sturm*), Santo Domingo in Tehuantepec (*Richardson*), Oaxaca [2 3].

Five specimens of this species are before me, including one of the types from the Laferté collection. The male was not known to Candèze; it has the anterior and intermediate tibiæ, and the apical joint of each tarsus, ciliate. *C. morio* is very closely allied to *C. silbermanni*, from which it chiefly differs in having the alternate interstices of the elytra more strongly costate.

### 13. **Chalcolepidius pruinosus.**

*Chalcolepidius pruinosus*, Er. Zeitschr. für Ent. iii. p. 84 [1]; Cand. Monogr. Elat. i. p. 276 [2]; Révis. Elat. p. 165 [3]; Bull. Soc. Ent. Belg. 1886, p. lxxii [4].

*Hab.* Mexico [1–4], Etla, Parada (*Sallé*), Oaxaca (*Sallé, Höge, coll. Janson*).

This insect is very closely allied to, and perhaps only a variety of, *C. silbermanni*, from which it differs in its slaty-blue or greenish scales and more parallel shape. The male characters are similar.

### 14. **Chalcolepidius forreri.** (Tab. XII. fig. 5, ♀.)

*Chalcolepidius forreri*, Cand. Bull. Soc. Ent. Belg. 1886, p. lxxii [1].

*Hab.* Mexico, Tres Marias Is. (*Forrer* [1]).

We have received two female specimens of this species. *C. forreri* is allied to *C. silbermanni* and *C. pruinosus*, but differs from both in the broader and much more feebly costate alternate elytral interstices; the elytra are impressed with rows of fine, rather widely separated punctures, which are completely hidden by the scales.

### 15. **Chalcolepidius virginalis.** (Tab. XII. figg. 2, ♂; 3, ♀, var.)

*Chalcolepidius virginalis*, Cand. Monogr. Elat. i. p. 288 [1]; Révis. Elat. p. 168 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxiii [3].

*Hab.* MEXICO, Merida in Yucatan [1 2 3] (*Pilate, in coll. Janson; Sallé*), Temax in North Yucatan (*Gaumer*).

*Var.* The marginal band of white scales much narrower, the rest of the thorax and elytra, the base of the latter excepted, clothed with minute greenish or cinereous scales.

*Hab.* MEXICO, Oaxaca (*Sallé*), Tehuantepec (*Sumichrast*).

There is a female specimen of the typical form of this species in the Janson collection and a pair in our own. The male, as noted by Candèze, has the apex of the anterior tibiæ and the apical joint of each tarsus fringed with long hairs. The upper and under surfaces are clothed with elongate white scales, which form a broad marginal stripe on the thorax and elytra; the elytral interstices and a broad median vitta on the thorax are sparsely clothed with minute brassy scales. Of the variety we have received two examples, both females. We figure two specimens: a typical male from Yucatan, and a female of the variety, from Tehuantepec.

### 16. **Chalcolepidius angustatus.** (Tab. XII. fig. 4, ♀.)

♂. *Chalcolepidius angustatus*, Cand. Monogr. Elat. i. p. 290, t. 6. fig. 4 [1]; Révis. Elat. p. 169 [2]; Bull. Soc. Ent. Belg. 1886, p. lxxiv [3].

♀. *Chalcolepidius circumductus*, Cand. Monogr. Elat. i. p. 289 [4]; Révis. Elat. p. 169 [5]; Bull. Soc. Ent. Belg. 1886, p. lxxiv [6].

*Hab.* MEXICO (*Deyrolle* [4], *in coll. Janson*), Cosamaloapan in Vera Cruz (*Sallé*), Vera Cruz [5 6], Oaxaca [1 2 3].

With the types before me, I am unable to separate *C. circumductus* from *C. angustatus*; the description of the latter was made from two males (one abraded), that of *C. circumductus* from a single female. *C. angustatus* has the marginal bands of scales on the thorax and elytra almost white, and the minute scales on the dorsum greyish, the bands in *C. circumductus* being luteous and the minute scales olive-green. The marginal bands on the thorax are rather narrow and extend obliquely from opposite the eyes to near the base, narrowing behind. The alternate elytral interstices are rather broader and more raised in *C. circumductus* than in *C. angustatus*, but with the additional material before me too much importance must not be placed on this character. We figure a female example, the type of *C. circumductus*, Cand.

### 17. **Chalcolepidius inops.**

*Chalcolepidius inops*, Cand. Bull. Soc. Ent. Belg. 1886, p. lxxiii [1].

"Niger, squamulis minutissimis olivaceis omnino dense obductus; antennis articulo tertio quarto multo breviore; prothorace latitudine longiore, a basi arcuatim angustato, crebre punctulato, antice punctis majoribus nonnullis adsperso, medio linea elevata, marginibus lateralibus anguste deplanatis; scutello triangulari, medio sulcato et angulo antico bifido; elytris sulcatis, sulcis externis punctatis, interstitiis æqualibus.—Long. 23, lat. 8 millim."

*Hab.* MEXICO, Sierra Madre de Chihuahua [1].

According to Candèze, this species resembles *C. virens*, Fabr., in general facies, but differs from that insect in the very short third joint of the antennæ, this character bringing it near *C. angustatus*, &c.

### 18. **Chalcolepidius murinus.** (Tab. XII. fig. 6, ♂.)

Elongate-oval, bronze-black, densely, uniformly clothed above and beneath with minute brownish-cinereous scales. Head densely punctured, very broadly triangularly depressed in front; antennæ strongly serrate, the third joint small, very short, not half the length of the fourth, acutely triangular. Prothorax longer than broad, moderately convex, subparallel behind, the sides feebly rounded and converging anteriorly, slightly sinuate behind; the margins reflexed at the base; the hind angles sharp, not or scarcely divergent; the base with a strongly bidentate median lobe; the surface closely, minutely punctate, and obsoletely carinate down the middle. Scutellum obcordate, horizontal, deeply canaliculate anteriorly, and obtusely bidentate in front, finely punctured. Elytra twice as long as the prothorax, subparallel in their basal third, the sides gradually converging thence to the apex, the apices rounded; the marginal carina deflexed anteriorly, obsolete in front; finely punctate-striate, the punctures deep and not hidden by the scales; the interstices equal in width, feebly convex, densely minutely punctate. Beneath densely, finely punctate, the prosternum, the middle of the meso- and metasternum, and a space along the centre of the ventral segments 1–4, smoother and almost glabrous. Propleuræ grooved on the inner side in front.

♂. Antennæ more strongly serrate; anterior and intermediate tibiæ, and the apical joint of each tarsus, ciliate; fifth ventral segment with a broad space in the middle, widened posteriorly and extending to the apex, almost impunctate and glabrous.

Length 21½–25, breadth 6¾–9½ millim. (♂ ♀.)

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

Three specimens, one of which has been examined by Dr. Candèze and returned as unknown to him, with the following remarks attached:—"Near *C. inops*, but differing from it in having the margins of the thorax not flattened and all the elytral striæ punctured."

### 19. **Chalcolepidius jansoni.** (Tab. XII. fig. 7, ♀.)

*Chalcolepidius jansoni*, Cand. Révis. Elat. p. 165 (1874) [1]; Bull. Soc. Ent. Belg. 1886, p. lxxiii [2].

*Hab.* Nicaragua [2] (*Sallé*), Chontales (*Belt* [1], *E. M. Janson* [1]).

Fourteen specimens of this species are before me, all females. In this insect the upper and under surfaces are uniformly clothed with minute, rather dull, subopalescent, greenish scales. The sutural angles of the elytra are acutely produced. We figure one of Candèze's types.

### 20. **Chalcolepidius boucardi.** (Tab. XII. fig. 12, ♂.)

*Chalcolepidius boucardi*, Cand. Révis. Elat. p. 169 (1874) [1]; Bull. Soc. Ent. Belg. 1886, p. lxxiv [2].

*Hab.* Mexico, Cuernavaca (*Boucard* [1 2], *Sallé*).

A male example of this species is contained in the Sallé collection, presumably the type. The anterior tibiæ have a few short teeth on the inner edge.

### 21. **Chalcolepidius desmaresti.** (Tab. XII. fig. 8, ♀, var.; 9, ♂.)

*Chalcolepidius desmaresti*, Chevr. Col. Mex. Cent. ii. fasc. 8, no. 195 (Sept. 1835)[1]; Cand. Monogr. Elat. i. p. 269[2]; Révis. Elat. p. 162[3]; Bull. Soc. Ent. Belg. 1886, p. lxix[4].

*Chalcolepidius procerus*, Er. Zeitschr. für Ent. iii. p. 84[5].

*Hab.* MEXICO[4 5] (*coll. Janson*), Orizaba[1 2 3] (*Sallé*), Jalapa (*Höge*, *M. Trujillo*), Misantla (*Höge*); GUATEMALA, Purula in Vera Paz (*Champion*); COSTA RICA (*Van Patten*, *coll. Janson*).

In this species the ground-colour of the elytra varies from black to bright ferruginous; the scales of the upper surface also vary in colour. The thorax has a narrow bare space down the middle of the disc; this space, however, in freshly emerged examples is sparsely clothed with scales. The male, three specimens of which are before me, has the anterior and intermediate tibiæ abruptly dilated on the inner side at the apex; neither the tibiæ nor tarsi are ciliate. We figure two examples: a typical male from Misantla, and a female of a variety from Purula.

### 22. **Chalcolepidius mniszechi.**

*Chalcolepidius mniszechi*, Cand. Elat. Nouv. iii. p. 21 (1881)[1]; Bull. Soc. Ent. Belg. 1886, p. lxix[2].

"Niger, squamulis olivaceis sparsis, striis elytrorum marginibusque albicanti vestitus; antennis nigris, articulo tertio minuto; prothorace latitudine longiore, parallelo, apice rotundatim angustato, dorso æquali, angulis posticis vix divaricatis; scutello medio tumido; elytris striis parum punctatis, per paria approximatis; subtus albicans."

*Hab.* MEXICO (*coll. Mniszech*[1 2]).

According to Candèze, this species resembles *C. mexicanus* in colour, but is broader; the size is not given.

### 23. **Chalcolepidius mexicanus.** (Tab. XII. figg. 10, ♂; 11, ♀.)

*Chalcolepidius mexicanus*, Cast. in Silb. Rev. Ent. iv. p. 13 (1836)[1]; Cand. Monogr. Elat. i. p. 268[2]; Révis. Elat. p. 162[3]; Bull. Soc. Ent. Belg. 1886, p. lxix[4].

♂. *Chalcolepidius boisduvalii*, Dej. Cat. 3rd edit. p. 100[5].

♀. *Chalcolepidius chevrolatii*, Dej. Cat. loc. cit.[6].

*Hab.* MEXICO[1–6], Orizaba (*coll. Janson*, *ex Dejean*), Vera Cruz, Mirador (*Sallé*), Jalapa (*Höge*); NICARAGUA, Chontales (*E. M. Janson*).

I have seen twenty specimens of this species, including seven males. All the females have the sides of the thorax and elytra, and a line down each of the striæ, clothed with elongate white scales, the scales on the rest of the upper surface being minute and olivaceous; the males (the var. *a* of Candèze) have only the base of the thorax, the scutellum, and the base, and sometimes the sides anteriorly, of the elytra, clothed with white scales. The legs and under surface are thickly clothed with elongate white

scales, with minute olivaceous scales intermixed; but in two of the females from Jalapa, and in the two females from Chontales, the scales on these parts are nearly all small and olivaceous. The anterior tibiæ in the males are armed on the inner edge with about ten fine sharp teeth, and the antennæ in this sex have the joints from the fourth considerably produced at their inner apical angles. *C. mexicanus* may be known from *C. oxydatus* by the less acute sutural angles of the elytra, and from the South-American *C. lemoinei* by the less divergent hind angles of the thorax. We figure a male from Mirador and a female from Jalapa.

### 24. **Chalcolepidius lenzi.**

*Chalcolepidius lenzi,* Cand. Bull. Soc. Ent. Belg. 1886, p. lxix [1].

"Niger, squamulis minutissimis olivaceo-cinereis similiter et densissime vestitus; antennis articulo secundo brevissimo, tertio triangulari, sequentibus subquadratis; prothorace latitudine longiore, basi constricto, regulariter convexo, crebre punctulato et inæquali, angulis posticis parvis fortiter divaricatis; scutello transverso; elytris sulcatis, sulcis punctatis; subtus niger et squamulis concoloribus obductus.—Long. 40, lat. 11 millim."

*Hab.* Mexico, Sinaloa [1].

Described from a single female example. Allied to *C. rubripennis*, Lec., from Lower California.

### 25. **Chalcolepidius behrensi.**

*Chalcolepidius behrensi,* Cand. Bull. Soc. Ent. Belg. 1886, p. lxx [1].

"Niger, confertissime squamulis minutissimis olivaceis vestitus; antennis nigris, articulo secundo brevi, tertio triangulari; prothorace longo, basi et apice angustato, æqualiter convexo, confertissime punctulato; scutello transverso; elytris striato-punctatis; subtus concolor.—Long. 30, lat. $8\frac{1}{2}$ millim."

*Hab.* Mexico (*Behrens* [1]).

"Near *C. lenzi*, but smaller; the greenish scales less dense, the thorax much longer and more narrowed in front, its surface not uneven, the elytra striated, but not sulcate."

### 26. **Chalcolepidius jekeli.** (Tab. XII. fig. 13, ♀.)

*Chalcolepidius jekeli,* Cand. Révis. Elat. p. 162 (1874) [1]; Bull. Soc. Ent. Belg. 1886, p. lxx [2].

*Hab.* Guatemala [2], Las Mercedes and Zapote (*Champion*).

This large species closely resembles *C. lacordairei*, which occurs at the same localities in Guatemala; but may be easily known from that insect by its more elongate and narrower form, and the differently shaped scutellum. Four female examples were found by myself on the Pacific slope of Guatemala, and I believe it has also been found by Señor Juan Rodriguez. The original locality given by Candèze [1] was Colombia? A female from Las Mercedes is figured.

### 27. **Chalcolepidius rodriguezi.** (Tab. XII. figg. 16, ♂; 17, ♀, var.)

*Chalcolepidius rodriguezi*, Cand. Bull. Soc. Ent. Belg. 1886, p. lxx [1].

*Hab.* Guatemala (*Rodriguez* [1]; *coll. Janson*).

There is a male example of this species in the Janson collection; a female specimen from the same collection differs from it in having a large admixture of elongate white scales on both the upper and under surfaces. This difference is apparently sexual, as in *C. mexicanus*. The male has about eight fine sharp teeth on the inner edge of the anterior tibiæ. *C. rodriguezi* is closely allied to *C. mexicanus*, but is less elongate and less parallel, with the elytral interstices more equal in width.

### 28. **Chalcolepidius attenuatus.** (Tab. XII. fig. 18, ♂.)

*Chalcolepidius attenuatus*, Er. Zeitschr. für Ent. iii. p. 86 [1]; Cand. Monogr. Elat. i. p. 267 [2]; Révis. Elat. p. 162 [3]; Bull. Soc. Ent. Belg. 1886, p. lxx [4].

*Hab.* Mexico [1–4], Oaxaca (*coll. Janson*).

There is a pair of this species in the Janson collection; the male is figured.

### 29. **Chalcolepidius cuneatus.** (Tab. XII. fig. 14, ♂.)

Elongate, narrow, attenuate behind, black, densely and uniformly clothed above and beneath with minute brownish-cinereous scales. Head densely punctured, very broadly triangularly depressed in front; antennæ strongly serrate, the third joint small, very short, not half the length of the fourth, acutely triangular. Prothorax much longer than broad, feebly convex; the sides subparallel, rounded and converging in front, and strongly sinuate behind; the margins very narrowly reflexed; the hind angles thickened, divergent, and subacute; the base with an obtusely bidentate median lobe; the surface densely, minutely punctate. Scutellum strongly transverse, thickly punctured. Elytra nearly twice the length of the prothorax, narrowing almost from the base, with the apices conjointly rounded, the marginal carina obsolete in front; punctate-striate, the punctures deep and not very closely placed, not hidden by the scales; the interstices equal in width, almost flat, densely minutely punctate. Beneath, including the whole of the fifth ventral segment, densely minutely punctate, the prosternum and the middle of the meso- and metasternum smoother and almost glabrous. Propleuræ not grooved in front.

Length 22, breadth $6\frac{1}{4}$ millim. (♂.)

*Hab.* Mexico, Acapulco in Guerrero (*Höge*).

One male example. Closely allied to *C. attenuatus*, Er., but differing from it in the almost flat elytral interstices, and the coarser punctures of the striæ. As in that species, neither the tibiæ nor the tarsi are ciliate in the male.

### 30. **Chalcolepidius oxydatus.** (Tab. XII. fig. 15, ♂.)

*Chalcolepidius oxydatus*, Cand. Monogr. Elat. i. p. 266 [1]; Révis. Elat. p. 161 [2]; Bull. Soc. Ent. Belg. 1886, pp. lxvi, lxix [3].

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt*); Costa Rica, El General, Pacific slope (*Pittier, in Mus. Brit.*); Panama, Bugaba, Tolé (*Champion*).—Venezuela [1 2 3].

The five specimens we have received of this species are all of the male sex. They

differ from the females in having the antennæ more strongly serrate, and the anterior tibiæ armed with about ten fine sharp teeth. The tibiæ in both sexes are armed with a few short teeth, those on the anterior pair being longer and more numerous in the males. The upper surface is uniformly clothed with minute greenish scales, but in the Venezuelan type a few elongate whitish scales (as noted by Candèze [3]) are distinctly visible along the elytral margins. A male of a colour-variety from Tolé is figured.

### 31. **Chalcolepidius dugesi.** (Tab. XII. fig. 19, ♀.)

*Chalcolepidius dugesi*, Cand. Bull. Soc. Ent. Belg. 1886, p. lxx [1].

*Hab.* Mexico, Sonora (*coll. Janson*), Tupataro in Guanajuato (*Dugès* [1], *Höge*).

We are indebted to Dr. Candèze for a specimen of this very distinct species, which we figure; we have also received another from Herr Höge, and there is a third in the Janson collection, all females. The antennæ are described as subpectinate in the male.

### 32. **Chalcolepidius tenuis.** (Tab. XII. fig. 20, ♀.)

Very elongate, narrow, subparallel, black, uniformly clothed above and beneath with minute brownish-cinereous scales. Head densely punctured, very broadly triangularly depressed in front; antennæ strongly serrate, the third joint small, very short, not half the length of the fourth, acutely triangular. Prothorax about one-fourth longer than broad, convex; the sides subparallel to near the apex, abruptly obliquely converging in front, slightly sinuous at the middle, and strongly sinuate before the base; the hind angles thickened, abruptly and strongly divergent, sharp; the margins very narrowly reflexed; the base with an obtusely bidentate median lobe; the surface densely, minutely punctate and with scattered coarse punctures intermixed at the sides and upon the anterior part of the disc. Scutellum strongly transverse, densely punctured. Elytra nearly twice the length of the prothorax, subparallel to beyond the middle and gradually narrowing thence to the apex, the apices conjointly rounded, the sutural angle rather sharp, the marginal carina not reaching the base; deeply punctate-striate, the punctures closely placed and not hidden by the scales; the interstices equal in width, convex throughout, densely, very finely punctate. Beneath densely punctured, the prosternum and the middle of the meso- and metasternum smoother and almost glabrous. Propleuræ obsoletely grooved on the inner side before the apex.
Length $24\frac{1}{2}$, breadth $6\frac{1}{4}$ millim. (♀.)

*Hab.* Mexico, Oaxaca (*Höge*).

One rather worn female specimen. This species has quite the facies of the North-American *C. viridipilis*, from which it differs in the transverse scutellum and the abruptly divergent hind angles of the thorax, characters bringing it near *C. dugesi*. Dr. Candèze has returned the insect to me as unknown to him.

## SEMIOTUS.

*Semiotus*, Eschscholtz, in Thon's Archiv, ii. 1, p. 31 (1829); Candèze, Monogr. Elat. i. p. 292.

Eighty members of this purely American genus are enumerated by Dr. Candèze in his Catalogue, but it is probable that several of them are nothing more than local varieties of widely distributed species. With one exception, the Chilian *S. luteipennis*, Guér., all are from the tropical portions of the continent. Compared with *Chalcolepidius*, *Semiotus* is poorly represented in Central America, it having eight species only.

The genus ranges from the Mexican State of Vera Cruz to Chili; its headquarters would appear to be in the forest-regions of Colombia and Ecuador. As in *Chalcolepidius*, the males of many of the species are of extreme rarity. The females have in some cases two large, deep, oval or rounded, piliferous foveæ on the fifth ventral segment, these in certain species becoming confluent so as to form a cordate impression. In *S. insignis*, *S. dohrni*, and *S. chontalenus* this segment is unimpressed in both sexes. The apex of the fifth ventral segment is also usually subtruncate, or even slightly emarginate, in the females. In Janson's MSS. notes on *Semiotus*, and also in his collection, the sexes are reversed. These insects, like *Chalcolepidius*, are found about fallen trees in fresh clearings in the forest; they readily take to wing in the hot sun.

Head unidentate in front; elytra bimucronate at the apex; size very large.
  Elytra not distinctly striate throughout; prothorax with the black median vitta uninterrupted . . . . . *cuspidatus.*
  Elytra distinctly striate throughout; prothorax with the black median vitta divided down the centre by a rufous stripe . . . . . *splendidus.*
Head strongly and acutely bidentate in front.
  Elytra unimucronate at the apex; size large or moderate.
    Form very elongate; prothorax with five black spots, the outer two on either side sometimes coalescent; elytra with the suture and margins at most narrowly black beyond the middle . . . . . *insignis.*
    Form moderately elongate.
      Prothorax with two black vittæ, sometimes interrupted; elytra with the suture and margins broadly black beyond the middle . . . . . *lafertei.*
      Prothorax with a median black vitta, sometimes divided along the middle by a rufous stripe.
        Elytra bivittate on the disc, the sutural interstice also partly or entirely, and the margins partly, infuscate or black . . . . . *dohrni.*
        Elytra quadrivittate, the suture and margins at most very narrowly infuscate . . . . . *superbus.*
  Elytra bimucronate at the apex; head, a median vitta on the prothorax, the scutellum, and the apical half of the elytra black; size small . . . . . *chontalenus.*
Head bilobed in front. . . . . *ligneus.*

1. **Semiotus cuspidatus.** (Tab. XII. figg. 21; 21 *a*, fifth ventral segment, ♀.)

*Eucamptus cuspidatus*, Chevr. Col. Mex. Cent. i. fasc. 1, no. 35 (Jan. 1833) [1].
*Semiotus cuspidatus*, Cand. Monogr. Elat. i. p. 299 [2]; Révis. Elat. p. 173 [3].
*Pericallus dorsalis*, Latr. Ann. Soc. Ent. Fr. iii. p. 140, nota [4].

*Hab.* Mexico [2 3 4], Orizaba (*coll. Janson*), Santecomapan (*Sallé*), Cordova (*Sallé*, *Höge*), Coatepec (*Höge*), Zongolica in Vera Cruz [1]; Guatemala, Purula, Sabo, and Sinanja in Vera Paz, Zapote, Cerro Zunil (*Champion*), Capetillo (*Rodriguez*), El Rincon in San Marcos (*Richardson*).

This fine species inhabits Guatemala and Southern Mexico; Candèze [2 3] also quotes Colombia, Ecuador, and Peru, but these localities probably refer to the following, *S. splendidus*. In Guatemala the insect inhabits both the Atlantic and Pacific slopes, and reaches an altitude of about 4000 feet in the mountains. The males, like those of many species of *Chalcolepidius*, are extremely rare; the females have a deep, cordate, piliferous impression close to the apex of the fifth ventral segment, and the apex of this segment feebly emarginate. The anterior black spot on the head is often obsolete. I have seen forty-two specimens of *S. cuspidatus*, of which one only is of the male sex. A female from Cerro Zunil is figured.

2. **Semiotus splendidus.** (Tab. XII. figg. 23; 23 *a*, fifth ventral segment, ♀.)

*Semiotus splendidus*, Cand. Elat. Nouv. iii. p. 23 [1]; Cat. Méthod. Elat. p. 40 (1891) [2].

*Hab.* Costa Rica (*Sallé*, *Van Patten*); Panama (*coll. Janson*), Chiriqui (*coll. Janson*, *Ribbe*), Volcan de Chiriqui 2000 to 3000 feet (*Champion*), Veragua [2].—Ecuador [1].

Found in plenty by Van Patten and myself. *S. splendidus* is a close ally of *S. cuspidatus*, but differs from it in having the elytra rather deeply punctate-striate throughout, with the interstices moderately convex, and the broad black median vitta on the thorax divided down the middle by a rufous stripe, this colour usually extending to the scutellum. The elytra in the Chiriqui specimens have a common subtriangular black patch at the base; but in the Costa Rican examples this is almost obsolete. In one specimen from the Volcan de Chiriqui the median rufous stripe on the thorax is very narrow, the scutellum is entirely black, and the common triangular black patch on the elytra is as elongate as it is in *S. cuspidatus*. The anterior black spot on the head is often obsolete. I have seen thirty-seven specimens of *S. splendidus*, four only of which are males. The female characters are similar to those of *S. cuspidatus*. A specimen from the Volcan de Chiriqui is figured.

3. **Semiotus insignis.** (Tab. XII. fig. 25, ♀, var. *longus*.)

*Semiotus insignis*, Cand. Monogr. Elat. i. p. 311, t. 6. fig. 9 [1]; Révis. Elat. p. 176 [2].
Var. *Semiotus longus*, Cand. Monogr. Elat. i. p. 315 [3]; Révis. Elat. p. 178 [4].

*Hab.* Mexico [1 3 4], Cordova, Tuxtla (*Sallé*); Guatemala, Teleman and Senahu in Vera Paz (*Champion*); Nicaragua, Chontales [2] (*Belt*, *E. M. Janson*); Costa Rica (*coll. Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Not uncommon in Nicaragua and the State of Panama. The variety *longus*, Cand., has the two black spots on each side of the disc of the thorax confluent, so as to form two longitudinal vittæ. The fifth ventral segment is unimpressed, and feebly truncate at the apex, in the female. Amongst the forty-nine specimens before me, one only is of the male sex. A female example of the var. *longus*, from Tuxtla, is shown on our Plate.

4. **Semiotus lafertei.** (Tab. XII. figg. 22; 22 *a*, fifth ventral segment, ♀.)

*Semiotus lafertei*, Cand. Monogr. Elat. i. p. 313[1]; Révis. Elat. p. 177[2].

*Hab.* Mexico[1 2] (*coll. Janson, ex Laferté*), Cosamaloapan, Cordova, and Tuxtla in Vera Cruz (*Sallé*); Guatemala, Coban, Senahu, Panima, and Purula in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt, E. M. Janson, Richardson*); Costa Rica (*Van Patten*), Caché (*Rogers*); Panama (*coll. Janson*), Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*Ribbe*).—Colombia.

This insect is abundant in Nicaragua and the State of Panama; in Guatemala and Mexico it appears to be confined to the Atlantic slope. *S. lafertei* is, no doubt, a variety of the S.-American *S. affinis*, Guérin (=*candezei*, Kirsch), from which it differs in having the marginal spot on the thorax obliterated above, the sutural stripe not extending to the base, and the cavity surrounding the scutellum not black. The thoracic vittæ are sometimes interrupted. Candèze in his 'Catalogue' (1891), p. 41, nota, remarks that *S. candezei*, Kirsch, *S. lafertei*, Cand., and *S. affinis*, Guér., may be regarded as local forms of *S. intermedius*, Herbst. I have examined 107 specimens of *S. lafertei* from within our limits, four only of which are males. The females have two very large, oval, piliferous foveæ on the fifth ventral segment, extending from about the basal fourth to near the apex, the apex itself being feebly emarginate. A specimen from Tuxtla is figured.

5. **Semiotus dohrni.** (Tab. XIII. figg. 1, ♀; 2, ♀, var.)

*Semiotus dohrni*, Cand. Ann. Soc. Ent. Belg. 1889, p. 80 (Elat. Nouv. iv. p. 14)[1].

*Hab.* Nicaragua, Chontales (*Belt*); Panama[1] (*coll. Janson*), Chiriqui (*Trötsch*).

*Var.* The head with a patch on the vertex, the prothorax with a broad median vitta extending from the base almost to the apex and a small spot on the sides before the middle (extending to the pleuræ beneath), the scutellum and the cavity surrounding it, and the elytra with the suture from the base to the apex, two vittæ on the disc (extending along the fourth and sixth interspaces from near the base to near the apex, and narrowing behind), and a marginal stripe (extending from opposite the hind coxæ to the apex), black; a broad stripe down either side of the pro-, meso-, and metasternum, and first four ventral segments, also black.

*Hab.* Guatemala, Cerro Zunil (*Champion*).

Two specimens from the State of Panama have been examined by Dr. Candèze. The three examples from Guatemala differ from them in having the black markings much more extended, both above and beneath, and they also have a black marginal spot on the thorax. The single specimen from Chontales resembles those from Panama. All of them are of the female sex. They have the fifth ventral segment unimpressed, with the apex subtruncate. We figure two specimens—one from Chiriqui, and one of the variety from Guatemala.

6. **Semiotus superbus.** (Tab. XIII. figg. 4, 5, ♀ ; 5 *a*, fifth ventral segment, ♀ .)

*Semiotus superbus,* Kirsch, Berl. ent. Zeitschr. 1866, p. 181[1] ; Cand. Révis. Elat. p. 179[2].

*Hab.* Costa Rica (*coll. Janson, Van Patten*), Rio Sucio, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui 3000 feet (*Champion*).—Colombia, Bogota[1 2]; Ecuador[2].

Not uncommon in Costa Rica and the State of Panama. Varies greatly in size, and also in colour, the two black vittæ on the thorax being frequently confluent, or narrow, so that the rufous intervening space is much broader than the vittæ. The females have two large, oval, piliferous foveæ on the fifth ventral segment beyond the middle; the apex of this segment is subtruncate in both sexes. Amongst the thirty-one Central-American specimens examined, nine are males. We figure two female specimens—one (fig. 4), a dark variety from the Volcan de Irazu; the other (fig. 5), the form described by Kirsch, from Rio Sucio.

7. **Semiotus chontalenus.** (Tab. XIII. figg. 3 ; 3 *a*, fifth ventral segment, ♀ .)

*Semiotus chontalenus,* Cand. Révis. Elat. p. 177[1].

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt, E. M. Janson*[1]) ; Costa Rica (*coll. Janson*) ; Panama, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

Not uncommon in Chiriqui. Amongst the twenty-seven specimens examined, six are males. The fifth ventral segment in the female has two very large, deep, oval, piliferous foveæ, extending from about the basal third to the apex, these becoming confluent behind and merely separated anteriorly by a sharp carina; the apex of this segment is rounded in both sexes. *S. chontalenus* is very closely allied to *S. caracasanus,* Cand., from which it differs in having the punctures of the elytral striæ almost obliterated, and the apical three or four joints of the antennæ yellow. In some examples the suture is black to the base; and in one from the Volcan de Chiriqui the apical joint only of the antennæ is lighter in colour. A typical specimen from Chontales is figured.

8. **Semiotus ligneus.** (Tab. XII. figg. 24 ; 24 *a*, fifth ventral segment, ♀ .)

*Elater ligneus,* Linn. Syst. Nat. 12th edit. i. 2, p. 652[1] ; Oliv. Ent. ii. no. 31, p. 17, t. 2. fig. 15[2].

*Semiotus ligneus,* Cand. Monogr. Elat. i. p. 302 *[3] ; Révis. Elat. p. 185[4].

*Elater conicus,* Voet, Cat. Syst. Col. i. p. 83, t. 42. fig. 9[5].

*Elater xylinus,* Perty, Del. anim. art. Bras. p. 22, t. 5. fig. 10[6].

*Hab.* Mexico, Cosamaloapan in Vera Cruz (*Sallé*) ; Nicaragua, Chontales (*Belt, E. M. Janson*) ; Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).—South America[3] ; Colombia ; Ecuador ; Guiana, Surinam[1 2], Cayenne[2] ; Amazons[4] ; Brazil[2 4 6] ; Peru ; Antilles, Grenada.

* Candèze also quotes Drury, Illustr. exot. Ins. iii. t. 47. fig. 4 (*Elater serraticornis*) ; but Drury's figure is obviously intended for *S. distinctus,* Herbst.

A widely distributed insect in Tropical America. I have seen altogether twenty-nine specimens of *S. ligneus*, the whole of which are females. In this sex the fifth ventral segment has two very large, rounded, piliferous foveæ beyond the middle, the apex of the segment being almost rounded. Nine examples from Central America are before me, five of these being from Chontales.

The published figures of this species are rather unsatisfactory; we therefore give a fresh one, taken from a Chontales specimen.

## OISTUS.

*Oistus*, Candèze, Monogr. Elat. i. p. 338 (1857).

This genus, the American exponent of the eastern *Campsosternus*, contains two species only, both peculiar to Central America, one of them extending as far south as Nicaragua.

In this genus, again, the males are much rarer than the females; they may be distinguished by the form of the fifth ventral segment.

Eyes very large; prothorax with a smooth bare spot on either side of the disc a little before the middle; elytra with smooth bare spots, the vestiture forming distinct fascicles . . . . . *cacicus.*

Eyes small; prothorax without smooth bare spots on the disc; elytral vestiture not forming distinct fascicles, the bare spots not distinctly defined . . . . *sphenosomus.*

### 1. **Oistus cacicus.** (Tab. XIII. figg. 8; 8 *a*, fifth ventral segment, ♂.)

*Oistus cacicus*, Cand. Monogr. Elat. i. p. 339, t. 6. figg. 5, 5 *a–c*[1]; Révis. Elat. p. 189[2].

*Hab.* Mexico, Orizaba[1 2], Tuxtla, Santecomapan (*Sallé*), Jalapa, Las Vigas (*Höge*); Guatemala, Coban (*Conradt*); Nicaragua, Chontales (*Belt*).

Nine specimens of this species are before me, one of which is a male. It has the apex of the fifth ventral segment produced in the middle into a long process, which is rounded at the tip and curved upwards. On the elytra there are numerous bare smooth spots, the interspaces between which are here and there densely, very minutely punctate, and clothed with hair-like scales, these forming fascicles on the densely punctured places. We figure a male from Coban.

### 2. **Oistus sphenosomus.** (Tab. XIII. figg. 7; 7 *a*, fifth ventral segment, ♂.)

*Oistus sphenosomus*, Cand. Monogr. Elat. i. p. 339[1]; Révis. Elat. p. 189[2].

*Hab.* Mexico, Orizaba[1 2] (*Sallé*), Jalapa (*Sallé*, *Höge*), Las Vigas (*Höge*).

Not uncommon in the State of Vera Cruz. Much smaller than the preceding, the eyes smaller, the thorax without a smooth bare spot on either side of the disc, the hair-like scales on the elytra not forming distinct fascicles. The type described by

Candèze is abraded and discoloured. Fresh specimens have the upper and under surfaces somewhat thickly clothed with yellowish-cinereous hair-like scales; the elytra have a few scattered bare spaces. In the male the fifth ventral segment is slightly elongated, sinuated at the sides beyond the middle, and rounded at the tip.

## Group **DICREPIDIINI.**

## DICREPIDIUS.

*Dicrepidius*, Eschscholtz, in Thon's Archiv, ii. 1, p. 31 (1829); Candèze, Monogr. Elat. ii. p. 143.

An American genus containing seven described species, three of which are from the island of Guadeloupe; on the mainland it ranges from the United States of North America to Uruguay, one of its members being very widely distributed. Two additional species are here described, one of them differing considerably from the others in its structural characters.

Posterior coxal plates broadly triangularly widened over the point of insertion of the femora; antennæ flabellate in the male.
- Antennæ very elongate in the male, much shorter in the female; the rami (♂) subequal in length, stout.
  - Apices of the elytra subtruncate; colour ferruginous . . . . . *ramicornis.*
  - Apices of the elytra conjointly rounded; colour black or pitchy-brown . . . *corvinus.*
- Antennæ very elongate in both sexes; the rami (♂) increasing in length, slender, the outer ones exceedingly elongate . . . . . *politus.*

Posterior coxal plates feebly subangularly widened over the point of insertion of the femora; antennæ obliquely serrate in the male . . . . . *serraticornis.*

### 1. **Dicrepidius ramicornis.**

*Elater ramicornis*, Beauv. Ins. Afr. et Am. p. 10, t. 7. figg. 3, 3 *a* (♂) (excl. t. 9. fig. 7 *) (1805)[1].

*Dicrepidius ramicornis*, Lec. Trans. Am. Phil. Soc. x. p. 461[2]; Jacq. Duv. in Ramon de la Sagra's Hist. fis. polit. y nat. de Cuba, Ins. p. 31, t. 7. fig. 12 (tarsus)[3]; Cand. Monogr. Elat. ii. p. 144, t. 2. figg. 8, 8 *a*, *b* (♀)[4]; Fleut. et Sallé, Ann. Soc. Ent. Fr. 1889, p. 409[5].

*Dicrepidius pectinicornis*, Eschsch. in Thon's Archiv, ii. 1, p. 31[6].

*Elater ceramboides*, Sturm, Cat. p. 135 (1826)[7].

*Hab.* North America, South Carolina[1], Southern States[2 4], Texas[4].—Mexico[4]; Nicaragua, Chontales (*E. M. Janson*).—South America[2 4] to Brazil[4 6 7]; Antilles[4], Cuba[2 3], Guadeloupe[5].

I have only seen a single example of *D. ramicornis* from within our limits, a female from Chontales. Like *Hemirhipus fascicularis*, this species is very widely distributed

* This figure is probably intended for the North-American *D. palmatus*, Cand.

on the American continent; it appears to be a common insect in Cuba and Tropical South America.

### 2. **Dicrepidius corvinus.** (Tab. XIII. fig. 9, ♂.)

*Dicrepidius corvinus*, Cand. Monogr. Elat. ii. p. 145[1].

*Hab.* Mexico (*Sallé*[1]), Tres Marias Is. (*Forrer*), Ventanas in Durango, Acapulco, Jalapa (*Höge*), Tuxtla, Vera Cruz (*Sallé*), Temax in North Yucatan (*Gaumer*); British Honduras, Cayo (*Blancaneaux*); Guatemala (*Sallé*[1]), Panzos (*Champion, Conradt*), Teleman, El Reposo, Las Mercedes, Mirandilla (*Champion*); Nicaragua (*Sallé*), Chontales (*E. M. Janson*).

We have received about forty specimens of this species. It is included in Henshaw's 'List of the Coleoptera of America north of Mexico,' but I have not seen an example of it from beyond our northern frontier. A male from Ventanas is figured.

### 3. **Dicrepidius politus.** (Tab. XIII. fig. 10, ♂.)

Elongate, narrow, cuneiform, black, very shining, sparsely clothed above and beneath with long yellowish-cinereous hairs; the legs, palpi, and antennæ testaceous or rufo-testaceous. Head moderately convex, thickly and rather coarsely punctate, shallowly depressed in front; antennæ very elongate, extending to beyond the middle of the elytra in both sexes—(♂) strongly flabellate, the rami narrow, increasing in length, the outer ones exceedingly elongate—(♀) tapering outwardly, the apical joints narrow. Prothorax longer than broad, convex, sinuate at the sides behind the middle; the hind angles slightly divergent, stout, greatly produced, carinate above, limited internally by a very deep excision; the base trilobate in the centre; the surface finely and sparsely punctured, the punctures becoming much coarser and closer at the sides in front, very distinctly canaliculate in the middle behind. Scutellum with a few scattered punctures. Elytra very elongate, narrowing from the base, a little flattened on the disc, subtruncate at the apex; with rows of rather scattered moderately coarse punctures placed in almost obsolete striæ, the punctures becoming very much finer towards the apex, the striæ deeply impressed on the basal declivity; the interstices almost flat, very sparsely but distinctly punctured. Beneath somewhat thickly punctured, the propleuræ, except at the sides, impunctate; posterior coxal plates broadly triangularly widened near the middle.

Length $13\frac{1}{2}$–20, breadth $3\frac{1}{4}$–$4\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt, E. M. Janson*).

*Var.* The prothorax coarsely punctured; the antennal rami slightly stouter. (♂.)

*Hab.* Panama, Bugaba (*Champion*).

Eleven specimens, seven of which belong to the typical form. There can be little doubt that the Panama examples represent nothing more than a local form of the same species, though the difference in the punctuation of the thorax is considerable. *D. politus* may be easily known from *D. ramicornis* and *D. corvinus* by the different form of the antennæ in both sexes, the rami being very much longer and narrower, and increasing in length outwardly, in the male, and the antenna itself very elongate and slender in the female; it also has the head and thorax much more sparsely punctured,

the elytra narrowing from the base in both sexes, with the striæ indistinct (except on the basal declivity) and the interstices almost flat, and the propleuræ punctured at the sides only. The antennal rami in the male are even more elongate than in the North-American *D. palmatus*, Cand. We figure a male from Chontales.

### 4. **Dicrepidius serraticornis.** (Tab. XIII. figg. 6, ♂ ; 6 *a*, antenna.)

Elongate, narrow, rather depressed, fusco-ferruginous, moderately shining, rather sparsely clothed above and beneath with long yellowish-cinereous hairs ; the legs and antennæ ferruginous. Head moderately convex, closely, coarsely punctate, broadly depressed in front and also very feebly sulcate in the middle between the eyes ; antennæ about reaching the basal fourth of the elytra, joints 3–10 strongly obliquely serrate, the outer apical angle of these joints becoming progressively more and more obliquely produced. Prothorax as long as broad, convex ; the hind angles stout, greatly produced, divergent, and carinate above, limited internally by a shallow impression ; the surface thickly and rather coarsely punctured, obsoletely canaliculate behind. Scutellum thickly punctured. Elytra moderately elongate, flattened on the disc, subparallel in their basal third and gradually narrowed thence to the apex, the apices conjointly rounded ; punctate-striate, the striæ shallow (except on the basal declivity), and with moderately coarse rather widely separated punctures, which become very much finer beyond the middle ; the interstices almost flat and sparsely finely punctate. Beneath somewhat thickly punctured, the propleuræ with widely scattered punctures, smooth at the base ; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora.

Length 14; breadth $3\frac{1}{4}$ millim. (♂.)

*Hab.* Mexico, La Noria in Sinaloa (*Höge*).

One male specimen. This species differs from all the other members of the genus known to me in having the posterior coxal plates only feebly subangularly widened over the point of insertion of the hind femora, and also in the non-flabellate antennæ in the male. The head is formed exactly as in the typical species of *Dicrepidius*.

## SPILUS.

*Spilus*, Candèze, Monogr. Elat. ii. p. 87 (1859).

The five described species of this genus are all from Tropical South America. One from Central America is now added. The males have the antennæ densely clothed with short fine erect hairs on their inner edge, a character not noticed by Candèze.

### 1. **Spilus ciliaticornis.** (Tab. XIII. figg. 11, ♂ ; 11 *a*, antenna.)

Elongate, rather narrow, convex, shining, varying in colour from pitchy-black to brownish-ferruginous ; the antennæ and legs testaceous or fusco-testaceous ; above and beneath somewhat thickly clothed with long flavo-cinereous hairs. Head moderately convex, closely and coarsely punctate, the frontal carina flexed downwards in the middle ; antennæ (♂) about half the length of the body, rather slender, the joints very finely and densely ciliate on their inner edge, 3 much shorter than 4, (♀) shorter, and with the joints very sparsely ciliate on their inner edge. Prothorax convex, about as long as broad, subconical ; the hind angles divergent, strongly produced, sharply carinate above, limited internally by a deep impression ; the surface rather sparsely, finely punctate, the punctures becoming coarser towards the apex, canaliculate behind, deeply so in some specimens, and with rather deep transverse basal grooves. Scutellum sparsely punctate. Elytra nearly three and a half times the length of the prothorax, narrowing from a little below the base, the sutural angles submucronate ; finely and shallowly punctate-striate, the interstices flat on

the disc, feebly convex at the sides, sparsely punctured. Beneath thickly punctured; prosternal sutures excavate in front.

Length $11\frac{3}{4}$–13, breadth $3\frac{1}{4}$–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Nine examples, three of which are males, one only being from Nicaragua. Like *Atractosomus corax*, this insect varies a good deal in colour, the males being almost black. *S. ciliaticornis* is not very closely allied to any of the species described by Candèze, from all of which it may be known by the subconical thorax. We figure a male from Chontales.

## SPILOMORPHUS.

Head with a prominent frontal carina; apical joint of the maxillary palpi rounded-triangular; eyes finely, but distinctly facetted; antennæ with the joints from the third broad and triangular; scutellum oval; prosternal sutures parallel behind, not excavate in front; prosternum concave and abruptly declivous behind the coxæ, the process slightly flattened and subhorizontal, with an angular projection before the tip; mesosternum with the sides of the cavity vertical, and with a rounded elevation at the base immediately in front of the metasternal process, which is produced anteriorly; legs short; posterior coxal plates rapidly and obliquely narrowing outwards; tarsi with joints 2 and 3 lamellate beneath; claws simple.

The single species referred to this genus has the meso- and metasternum formed exactly as in *Spilus*; but it differs from it in having the coxal plates undilated opposite the point of insertion of the femora, the legs short, the prosternal sutures parallel behind, the prosternum abruptly declivous behind the coxæ, and the antennæ with the joints from the third broadly triangular.

### 1. **Spilomorphus rubricollis.** (Tab. XIII. figg. 12, ♀; 12 *a*, antenna.)

Moderately elongate, rather broad, somewhat convex, shining; black, the prothorax ferrugineo-testaceous, the oral organs and frontal carina obscure ferruginous; the legs piceous, with the knees and the tips of the tarsi rufo-testaceous; the under surface, the prothorax excepted, in great part black, the metasternal process ferruginous; above sparsely clothed with rather long hairs, which partake of the ground-colour, beneath sparsely clothed with long yellowish-cinereous hairs. Head moderately convex, broadly flattened in front, closely, rather coarsely punctate, the frontal carina prominent; antennæ short, scarcely reaching beyond the humeri, joint 3 a little narrower than, and almost as long as, 4, 4–7 about as broad as long, 8–10 slightly longer than broad, 11 longer than 10. Prothorax transverse, moderately convex, the sides slightly rounded and gradually converging from a little before the base; the hind angles moderately produced, subparallel, rather blunt at the tip, not carinate above, limited internally by a short deep groove; the surface finely and rather closely punctate, canaliculate behind, and with shallow transverse basal grooves. Scutellum thickly punctured. Elytra three times the length of, and a little narrower than, the prothorax, parallel to the middle and gradually narrowing beyond, the apices broadly, conjointly rounded; finely punctate-striate; the interstices almost flat, thickly punctured. Beneath finely and somewhat thickly punctured, the propleuræ more sparsely and more coarsely punctate.

Length $10\frac{1}{2}$, breadth (of elytra) 3 millim. (♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

One specimen. This insect somewhat resembles *Anoplischius corallinicollis* and *A. hemipyrrhus*, Cand., but differs from them in the form of the meso- and metasternum.

## HETEROCREPIDIUS.

*Heterocrepidius*, Guérin, Mag. Zool. 1838, Ins. Voyage de la Favorite, p. 24; Candèze, Monogr. Elat. ii. p. 31 (part.).

*Heteropus*, Germar, Zeitschr. für Ent. i. p. 207 (1839).

This genus, as restricted by Fleutiaux*, contains sixteen species—thirteen from South America, one from Mexico, and two from S. Africa. The Mexican insect is here referred to *Anoplischius*.

The new species from Costa Rica described below is an aberrant form, but it possesses most of the structural characters of the genus.

1. **Heterocrepidius megalops.** (Tab. XIII. figg. 13, ♂; 13*a*, maxillary palpus.)

Very elongate, subparallel, rather broad, moderately convex, shining, pitchy-brown, the epipleuræ and the apex of the terminal joint of the antennæ ferruginous; above and beneath thickly clothed with long fulvo-cinereous hairs. Head flattened and slightly depressed in the middle between the eyes, somewhat thickly, moderately finely punctate; the eyes smooth, exceedingly large, projecting laterally beyond the anterior angles of the prothorax; the frontal carina flexed downwards, not prominent, truncate anteriorly; the antennæ slender, extending fully to the middle of the elytra, joints 3–11 gradually increasing in length and decreasing in width, 3 and 4 subequal, 11 much longer than 10. Prothorax transverse, trapezoidal, slightly compressed at the sides before the middle, convex in front, flattened behind; the hind angles narrow, greatly produced, divergent, curved inwards at the tip, feebly carinate above; the surface sparsely, finely punctate. Scutellum very sparsely punctured. Elytra nearly five times as long as the prothorax, parallel to about the middle, and gradually narrowing beyond, the apices conjointly rounded; finely and lightly punctate-striate, the punctures somewhat widely separated, becoming coarser towards the sides; the interstices almost flat, sparsely, finely punctate, the punctures similar to those of the inner striæ. Beneath finely, rather closely punctate; prosternum slightly declivous in front, with an abruptly raised chin-piece; posterior coxal plates rapidly and obliquely narrowing outwards. Legs very elongate; anterior and intermediate tarsi with joints 1–3, and the hind tarsi with joints 1 and 2, lamellate beneath.

Length 16, breadth $4\frac{1}{2}$ millim. (♂.)

*Hab.* Costa Rica, Volcan de Irazu 7000 feet (*Rogers*).

One specimen. This insect resembles the Colombian *Anoplischius conicicollis* and *A. longipennis*, Cand., in its general shape. It differs from all the described species of *Heterocrepidius* in its very elongate limbs, enormous eyes, very elongate elytra, and strongly raised prosternal chin-piece. The third joint of the antennæ is as long as the fourth. The apical joint of the maxillary palpi is oblong-ovate, a character separating the species from *Anoplischius*.

## ATRACTOSOMUS.

*Atractodes*, Germar, Zeitschr. für Ent. i. p. 219 (1839) (nomen præocc.); Candèze, Cat. Méthod. Elat. p. 63.

*Atractosomus*, Lacordaire, Gen. Col. iv. p. 173 (1857); Candèze, Monogr. Elat. ii. p. 132.

The twenty-one described species of this genus are all from Tropical America, two

* Ann. Soc. Ent. Fr. 1892, p. 408.

of them belonging to our fauna; four others from Central America are now added. In *A. fusiformis*, *A. cribricollis*, and *A. curticollis* the sides of the mesosternum are less raised than usual; *A. rubidus*, Cand., and *A. columbicus*, Fleut., possess a similar peculiarity.

Mesosternum with the sides strongly raised, horizontal; frontal carina prominent; antennæ with joints 3 and 4 equal in length; hind angles of the prothorax rather feebly carinate; elytra mucronate at the apex.
Elytra narrowing from about the middle; prosternal sutures deeply grooved in front; size large (22–25 millim.) . . . . . *arcuatus.*
Elytra narrowing almost from the base; prosternal sutures not or very feebly grooved in front.
Prothorax convex, moderately transverse, rounded at the sides anteriorly; size 12–15 millim. . . . . *corax.*
Prothorax feebly convex, strongly transverse, subtrapezoidal; size $9\frac{3}{4}$–11 millim. . . . . *mucronatus.*
Mesosternum with the sides moderately raised, subhorizontal; frontal carina flexed downwards in the middle; hind angles of the prothorax sharply carinate.
Antennæ with joint 3 shorter than 4; prothorax finely punctured; elytra sharply mucronate at the apex . . . . . *fusiformis.*
Antennæ with joints 3 and 4 equal; prothorax very coarsely punctured; elytra feebly mucronate at the apex . . . . . *cribricollis.*
Mesosternum with the sides sharply, triangularly raised in front; frontal carina prominent; antennæ with joint 3 very little longer than 2; hind angles of the prothorax obliquely carinate; elytra rounded at the apex . . . . . *curticollis.*

### 1. Atractosomus arcuatus.

*Atractosomus arcuatus*, Cand. Monogr. Elat. ii. p. 142, t. 3. figg. 3, 3 *a* [1].
*Atractodes arcuatus*, Cand. Cat. Méthod. Elat. p. 64 [2].

*Hab.* Mexico [1 2] (*coll. Janson, ex Mniszech*), Cordova (*Sallé*); Nicaragua, Chontales (*Belt, E. M. Janson*); Panama, Bugaba, Volcan de Chiriqui 3000 feet (*Champion*).

I have seen six specimens of this species, including two from Mexico, which are both females. The two from Chiriqui are of the male sex, and they have the antennæ more elongate. In three of the southern specimens the elytra are coarsely punctate-striate towards the suture.

### 2. Atractosomus corax.

*Atractosomus corax*, Cand. Monogr. Elat. ii. p. 142 [1].
*Atractodes corax*, Cand. Cat. Méthod. Elat. p. 64 [2].

*Hab.* Mexico, Cordova in Vera Cruz, Tanetza (*Sallé*), Jalapa (*Höge*).

*Var.* The elytra, and sometimes the head and prothorax also, brownish-ferruginous or rufo-piceous.
*Atractodes gagatinus*, Cand., in litt.

*Hab.* Mexico, Cordova (*Sallé*), Jalapa (*Höge*).

I have seen four specimens of the black or typical form, and three of the variety, the latter being all of the female sex. In one example of the light-coloured form the thorax is black and the elytra brown. The variety closely resembles *Anoplischius atractodes*, but may be distinguished from it by the horizontally raised sides of the mesosternum.

### 3. **Atractosomus mucronatus.**

Elongate, subfusiform, convex, shining; brown or reddish-brown, the prothorax almost entirely, or with a broad space across the middle, infuscate, the antennæ piceous or obscure ferruginous, the legs ferruginous or brownish; above and beneath rather sparsely clothed with moderately long yellowish-cinereous hairs. Head convex, closely, rather coarsely punctate, slightly depressed in the middle between the eyes; the frontal carina moderately prominent, rounded anteriorly; the eyes finely granulated; antennæ short, rather slender, joints 3 and 4 equal in length. Prothorax feebly convex, much broader than long, trapezoidal, the sides a little rounded anteriorly; the hind angles moderately produced, incurved at the tip, feebly carinate above; the surface thickly, finely punctate, the punctures more scattered towards the base, canaliculate behind. Scutellum sparsely punctured. Elytra moderately long, narrowing almost from the base in the male, more parallel in the female, the apices mucronate; finely and lightly punctate-striate, the interstices sparsely punctured and (except on the basal declivity) almost flat. Beneath thickly punctured; prosternal sutures not excavate in front; mesosternum with the sides raised, horizontal, and abruptly declivous in front; posterior coxal plates obliquely narrowing outwards.

Length $9\frac{3}{4}$–11, breadth $2\frac{1}{2}$–3 millim. (♂ ♀.)

*Hab.* Guatemala, Cerro Zunil 4000 feet (*Champion*).

Five specimens. Closely allied to *A. corax*, but smaller, the thorax less convex, more transverse, less rounded at the sides anteriorly, and with the hind angles more feebly carinate, the sides of the mesosternum less raised. The insect, at first sight, is extremely like *Anoplischius variabilis*.

### 4. **Atractosomus fusiformis.** (Tab. XIII. fig. 14, ♂.)

Elongate, fusiform, convex, rufo-piceous, very shining, sparsely clothed above and beneath with long fulvo-cinereous hair; the under surface, femora, and tibiæ, and the basal three joints of the antennæ, in great part piceous. Head sparsely, coarsely, unequally punctate, strongly declivous in front; the frontal carina on either side obliquely raised, and in the middle flexed downwards and not visible from above; eyes large and smooth; antennæ feebly serrate, extending to a little beyond the humeri in the female, slightly longer in the male, joint 3 shorter than 4, twice the length of 2. Prothorax subconical, nearly as long as broad, distinctly compressed at the sides before the middle, the sides slightly sinuate behind; the hind angles moderately produced, almost smooth, sharply carinate above, curved inwards at the tip; the surface sparsely, very finely punctate, the punctures becoming coarse towards the apex and minute at the base, deeply canaliculate in the middle behind, and with transverse deep basal grooves. Scutellum very sparsely punctured. Elytra three and a half times as long as the prothorax, rapidly narrowing from a little below the base, the apices mucronate; finely and shallowly punctate-striate (the punctures coarser in one specimen), the striæ deeply impressed on the basal declivity; the interstices flat, somewhat thickly, finely punctate. Beneath finely, rather sparsely punctate; prosternal sutures deeply grooved anteriorly; posterior coxal plates very feebly widened opposite the point of insertion of the femora; mesosternum subhorizontal, the sides thickened and moderately raised, almost vertical in front.

Length 17–19, breadth $4\frac{1}{2}$–5 millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

Three specimens. This very distinct species may be readily identified from its allies

by the very sharply carinate hind angles of the thorax. It belongs to Candèze's first section of the genus, and should be placed near *A. conicicollis*, Cand.; in the form of the head it resembles *A. ferrugineus*, Cand., and in its fusiform shape *A. columbicus*, Fleut. In two of the specimens the punctures of the inner striæ are not coarser than those of the interstices. The mesosternum, as in *A. rubidus*, Cand., has the sides a little less raised than in the typical species of *Atractosomus*.

### 5. **Atractosomus cribricollis.**

Moderately elongate, subfusiform, shining, obscure reddish-brown, the antennæ and legs ferruginous; above and beneath somewhat thickly clothed with long fulvo-cinereous hairs. Head feebly convex, slightly concave in front, very coarsely, densely punctate, the frontal carina prominent at the sides and flexed downwards in the middle; eyes large; antennæ extending to some little distance beyond the humeri, feebly serrate, joints 3 and 4 equal in length. Prothorax broader than long, moderately convex, the sides converging from the base and slightly rounded anteriorly; the hind angles considerably produced, sharply carinate above; the surface coarsely, densely punctate, feebly longitudinally depressed in the middle behind. Scutellum sparsely punctured. Elytra rather more than three times the length of the prothorax, rapidly narrowing from a little below the base, the apices acute; deeply but rather finely punctate-striate, the punctures closely placed; the interstices almost flat towards the suture, becoming rather convex at the sides, each with a very irregular double series of fine submuricate punctures. Beneath thickly punctured; prosternal sutures deeply grooved in front; mesosternum subhorizontal, the sides raised; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora.

Length 15, breadth $4\frac{1}{4}$–$4\frac{1}{2}$ millim.

*Hab.* NICARAGUA, Chontales (*Belt*, *E. M. Janson*); PANAMA, Bugaba (*Champion*).

Five specimens, apparently males. Closely allied to the South-American *A. robustus*, Cand., but narrower and less robust; the elytral striæ more sharply defined and less coarsely punctured; the hind angles of the thorax less divergent, the disc not deeply canaliculate behind.

### 6. **Atractosomus curticollis.** (Tab. XIII. figg. 15, ♂; 15 *a*, prosternal process; 15 *b*, genitalia.)

Moderately elongate, rather depressed, shining, brownish-testaceous, thickly clothed with long, fulvo-cinereous hairs, the legs and antennæ testaceous. Head feebly convex, densely, rugosely punctured, the frontal carina prominent, the eyes large and rather narrowly separated; antennæ slender, feebly serrate, about half the length of the body, joint 3 small, a little longer than 2. Prothorax strongly transverse, the sides feebly rounded and rapidly converging almost from the base; the hind angles considerably produced, acute, parallel at the apex, obliquely carinate above; the surface finely, rather closely punctate, flattened and declivous behind, without trace of median channel. Scutellum almost smooth. Elytra about four times the length of the prothorax, gradually narrowing from about the basal third, conjointly rounded at the apex; finely and shallowly punctate-striate, the punctures becoming much coarser externally, the interstices flat on the disc, feebly convex at the sides, sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous, but with the sides triangularly raised anteriorly and vertical in front.

Length $10\frac{3}{4}$, breadth 3 millim. (♂.)

*Hab.* GUATEMALA, Sinanja in Vera Paz (*Champion*).

One male specimen. This species is almost intermediate between *Atractosomus* and

*Anoplischius*, the sides of the mesosternum being triangularly raised in front only, but it seems best placed here. *A. curticollis* somewhat resembles *Anoplischius foveifrons* and *A. transversus*, but has the thorax more narrowed anteriorly, and with the carina of the hind angles shorter and more oblique, the third joint of the antennæ small, the eyes larger and more approximate, &c.; the prosternal process, viewed laterally, appears to be strongly and sharply bifurcate.

## ANOPLISCHIOPSIS.

Head convex, short, deeply sunk into the prothorax, with a moderately prominent frontal carina; eyes small, finely but distinctly granulated; apical joint of the maxillary palpi narrow, oval, obliquely truncate at the tip; antennæ in both sexes rather short, not exceeding half the length of the body, joint 3 not, or very little, wider than 2, shorter than 4, 4–10 triangular, 11 oval; prosternum declivous behind the anterior coxæ, the process moderately long, flattened, and subhorizontal, without tooth before the apex; prosternal sutures sinuous, excavate in front; mesosternum declivous and depressed, the sides of the cavity not raised; posterior coxal plates moderately wide inwards, not or feebly subangularly dilated above the point of insertion of the femora, rapidly and obliquely narrowing outwards; legs moderately elongate, slender; tarsi with joints 2 and 3 lamellate beneath, 4 small; claws simple.

This genus includes *Ischiodontus crocicollis*, Cand., from Colombia (which has the coxal plates subangularly widened opposite the point of insertion of the femora), and the six species from Central America described below. It differs from *Anoplischius* in having the prosternum declivous behind the anterior coxæ, with the process flattened, subhorizontal, and not toothed before the apex. The antennæ in both sexes are strongly serrate from the fourth joint. The notch on either side of the basal margin of the thorax is shallow or almost obsolete. The lobe on the underside of the second and third tarsal joints is long and narrow.

The six Central-American species may be separated thus:—

| | |
|---|---|
| Prothorax testaceous; elytra black, each with an oval flavo-testaceous spot on the disc at the base . . . . . | *basimaculatus.* |
| Prothorax variable in colour; elytra black, each with an attenuate vitta, not nearly reaching the apex, testaceous . . . . . | *bivittatus.* |
| Prothorax testaceous, with a black median vitta; elytra black, each with a very broad oblique vitta, and the outer limb, to near the apex, flavo-testaceous . | *flavovittatus.* |
| Prothorax testaceous, the head and elytra piceous . . . . . | *fuscipennis.* |
| Prothorax and elytra testaceous, the former with a median vitta, and the latter with the suture broadly to beyond the middle, infuscate . . . . . | *lineatocollis.* |
| Prothorax and elytra testaceous . . . . . | *luteus.* |

### 1. **Anoplischiopsis basimaculatus.** (Tab. XIII. fig. 16, ♀.)

Elongate, rather narrow, moderately convex, shining; the head (the eyes excepted), prothorax, under surface, and legs (the anterior coxæ excepted) testaceous; the elytra black, each with an oval flavo-testaceous spot on the disc at the base, the epipleuræ fuscous; the antennæ black, with the two basal joints testaceous; the upper and under surfaces sparsely clothed with rather long hairs, which partake of the ground-colour. Head convex, densely, rather coarsely punctate, the frontal carina flexed downwards and

moderately prominent; antennæ scarcely extending beyond the humeri, joint 3 a little wider than, and about twice as long as, 2, 4–10 broadly triangular, 6–10 as broad as long. Prothorax as long as broad, convex, the sides gradually converging from the base, feebly rounded anteriorly; the hind angles acute, divergent, strongly produced, and finely carinate above; the surface very finely, rather sparsely punctate, canaliculate behind. Scutellum sparsely punctured. Elytra three times the length of the prothorax, somewhat rapidly narrowing from about the middle, the apices rather sharp; finely punctate-striate; the interstices feebly convex at the sides, flat on the disc, somewhat thickly punctate. Beneath, including the propleuræ, finely, rather sparsely punctate.

Length $7\frac{2}{3}$, breadth $2\frac{1}{4}$ millim. (♀.)

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

One specimen. Larger than *A. bivittatus*; the elytra more attenuate at the apex, black, each with an oval flavo-testaceous spot at the base; the frontal carina more prominent. *A. crocicollis* (Cand.) is a closely allied species.

2. **Anoplischiopsis bivittatus.** (Tab. XIII. figg. 17, ♂; 17 *a*, antenna; 17 *b*, prosternal process.)

Elongate, narrow, rather convex, shining; the head black, sometimes in great part testaceous; the prothorax varying in colour from black, with an elongate-triangular patch on either side at the base and a transverse streak near the anterior angles testaceous, to entirely testaceous; the scutellum and elytra black or piceous, each elytron with a broad flavo-testaceous vitta on the disc extending to abont one-third from the apex and narrowing behind, the space between this and the suture sometimes fuscous; above thickly clothed with long hairs, which partake of the ground-colour; beneath piceous, the prothorax and the sides and apex of the abdomen sometimes testaceous, somewhat thickly clothed with long, decumbent, yellowish-cinereous hairs; the antennæ black or piceous, with the two or three basal joints testaceous; the legs testaceous.

Head convex, densely punctured, the frontal carina flexed downwards and not very prominent; antennæ rather short, in the male extending only to a little beyond the base of the elytra, joint 3 narrow, longer than 2, 4–10 broadly triangular, slightly longer than broad, subequal. Prothorax about as long as broad, convex, the sides gradually converging from the base, slightly rounded in front; the hind angles strongly produced, acute, slightly divergent, finely carinate above; the surface very finely, somewhat closely punctate, the punctures becoming coarser towards the apex, and sometimes very obsoletely canaliculate behind. Scutellum with a few scattered punctures. Elytra about three and one-third times the length of the prothorax, narrowing from about the middle; finely punctate-striate; the interstices feebly convex, flat towards the suture, minutely, somewhat thickly punctate. Beneath, including the propleuræ, finely, rather closely punctate; prosternum grooved between the coxæ.

Length 6–$7\frac{1}{4}$, breadth $1\frac{2}{3}$–2 millim. (♂ ♀.)

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Found in plenty by myself in Chiriqui. The colour of the head and thorax is variable: more than half the specimens have the thorax testaceous. This species resembles the Cuban *Anoplischius lineipennis*, Cand., in coloration, but differs from that insect in the form of the prosternal process &c. A specimen has been examined by Dr. Candèze and returned as unknown to him.

3. **Anoplischiopsis flavovittatus.** (Tab. XIII. fig. 18.)

Moderately elongate, narrow, shining; the head black; the prothorax testaceous, with a black median vitta, which is broadly widened in front and angularly dilated a little behind the middle; the scutellum and elytra black, each elytron with a broad oblique vitta on the disc extending to near the apex, and

the outer limb for the same distance, flavo-testaceous; the antennæ black, with the two basal joints testaceous beneath; the legs testaceous; beneath, the prothorax excepted, in great part piceous; the upper surface somewhat thickly clothed with rather long hairs, which partake of the ground-colour, the lower surface with decumbent yellowish-cinereous hairs. Head convex, densely punctured, the frontal carina flexed downwards and not very prominent; antennæ extending to a little beyond the humeri, joints 2 and 3 small, equal, 4–10 rather broadly triangular, slightly longer than broad. Prothorax as long as broad, convex, the sides gradually converging from the middle forwards, slightly rounded in front; the hind angles acute, scarcely divergent, strongly produced, finely carinate above; the surface thickly, finely punctate, the punctures becoming coarser towards the apex, deeply canaliculate behind. Scutellum with a few scattered punctures. Elytra about three times the length of the prothorax, gradually narrowing from the middle; deeply punctate-striate, the punctures closely placed; the interstices slightly convex throughout, somewhat thickly punctured. Beneath thickly punctate.

Length $5\frac{1}{2}$–$5\frac{3}{4}$, breadth $1\frac{1}{2}$ millim.

*Hab.* Panama, San Miguel in the Pearl Islands (*Champion*).

Two specimens, apparently male and female, one having the antennæ slightly shorter than the other. Allied to *A. bivittatus*, but less elongate, the median vitta on the thorax differently shaped, the elytral vitta broader, more oblique, not narrowed behind, and extending to near the apex, the elytral margins also testaceous to near the apex. It is smaller than any of the described species of the group Dicrepidiini.

### 4. **Anoplischiopsis fuscipennis.**

Moderately elongate, narrow, shining; the head black, the prothorax rufo-testaceous, the scutellum and elytra pitchy-black; the antennæ black, with the two basal joints testaceous; the legs testaceous; beneath, the prothorax excepted, piceous; the entire upper surface somewhat thickly clothed with rather long fulvous hairs, the lower surface with yellowish-cinereous hairs. Head convex, densely, rugosely punctured, the frontal carina moderately prominent; antennæ about half the length of the body, joint 3 small, slightly longer than 2, 4–10 rather broadly triangular. Prothorax as long as broad, convex, the sides gradually converging from the base, slightly rounded in front; the hind angles strongly produced, slightly divergent, without distinct carina above; the surface thickly, finely punctate, the punctures becoming coarser towards the apex. Scutellum with a few scattered punctures. Elytra three times the length of the prothorax, gradually narrowing from the middle, the apices conjointly rounded; finely punctate-striate; the interstices flat on the disc, feebly convex at the sides, somewhat thickly punctured. Beneath thickly punctured.

Length 6, breadth $1\frac{1}{2}$ millim. (♂.)

*Hab.* Nicaragua, Chontales (*E. M. Janson*).

One specimen. Allied to *A. bivittatus*, but differing from that species in having the elytra entirely piceous and clothed with fulvous hairs, and the hind angles of the thorax without distinct carina.

### 5. **Anoplischiopsis lineatocollis.** (Tab. XIV. fig. 2, ♀.)

Moderately elongate, rather convex, shining; testaceous, the eyes and the front of the head black, a broad median vitta on the prothorax, narrowing behind, the scutellum, and a broad sutural stripe on the elytra, extending to about one-fourth from the apex, pitchy-brown; the antennæ black, joints 1–3 testaceous at the tip; the oral organs, and the under surface, the sides of the propleuræ excepted, piceous, the legs pitchy-brown; above thickly clothed with moderately long hairs, which partake of the ground-colour, beneath sparsely clothed with yellowish-cinereous hairs. Head convex, densely, rather coarsely punctured, the frontal carina moderately prominent, flexed downwards in the middle; antennæ extending very little

beyond the base of the prothorax, joint 3 narrow, slightly longer than 2, 4–10 rather broadly triangular. Prothorax a little broader than long, the sides gradually converging from the base, rounded anteriorly; the hind angles moderately produced, scarcely divergent, blunt at the tip, carinate above; the surface finely, sparsely punctate, deeply canaliculate behind. Scutellum sparsely punctured. Elytra moderately long, narrowing from about the middle; deeply punctate-striate, the punctures fine and closely placed; the interstices convex throughout, thickly punctured. Beneath somewhat closely punctate.

Length $8\frac{1}{4}$, breadth $2\frac{1}{4}$ millim. (♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

One specimen, which has been examined by Dr. Candèze and returned as unknown to him. Allied to *A. bivittatus*, but larger and stouter and very differently coloured, the elytral interstices convex and thickly punctured, the thorax deeply canaliculate behind and with the hind angles obtuse at the tip.

### 6. **Anoplischiopsis luteus.**

Moderately elongate, rather convex, shining; testaceous, the scutellum and a large patch at the middle of the base of the prothorax infuscate in one specimen, the antennæ black or brownish, with the basal two joints testaceous, the legs testaceous, the under surface testaceous or ferruginous; above and beneath somewhat thickly clothed with fulvous hairs. Head convex, densely and rather coarsely punctured, the frontal carina moderately prominent, slightly flexed downwards in the middle; antennæ rather short, joint 3 slightly longer than 2, 4–10 somewhat broadly triangular. Prothorax a little broader than long, the sides gradually converging almost from the base, rounded anteriorly; the hind angles moderately produced, acute, not or feebly divergent, finely carinate above; the surface finely and sparsely, at the apex more coarsely, punctured, obsoletely canaliculate behind. Scutellum sparsely punctured. Elytra moderately long, narrowing from a little before the middle; finely punctate-striate, the interstices convex at the sides, flat or very feebly convex on the disc, and sparsely punctate. Beneath thickly punctured.

Length $6\frac{1}{2}$–8, breadth $1\frac{2}{3}$–2 millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*E. M. Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

Four specimens, one of which has been examined by Dr. Candèze and returned as unknown to him. Allied to *A. fuscipennis*, but differing from that species in its pallid head, elytra, and under surface, and also in having the hind angles of the thorax distinctly carinate. The dark mark on the prothorax in one specimen is perhaps due to discoloration.

## CYATHODERA.

*Cyathodera*, Blanchard, in D'Orbigny's Voyage dans l'Amér. mérid. vi. 2, p. 130 (1843); Candèze, Cat. Méthod. Elat. p. 57.

*Anoplischius*, sect. iv., Candèze, Monogr. Elat. ii. p. 76.

This genus contains two species of large size, both peculiar to Tropical America, one of them ranging as far north as Nicaragua.

### 1. **Cyathodera lanugicollis.**

*Anoplischius lanugicollis*, Cand. Monogr. Elat. ii. p. 77, t. 1. figg. 6, 6 *a–c* [1].

*Cyathodera lanugicollis*, Cand. Cat. Méthod. Elat. p. 57 [2].

*Hab.* NICARAGUA, Chontales (*E. M. Janson*); PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).—GUIANA [1 2], Cayenne; ECUADOR, Chiguinda; AMAZONS, Pará.

I have seen five (♂) specimens of this species, two of which are from Central America. The males have a smooth, glabrous, oblong space on the fifth ventral segment near the apex. The elytra are mucronate at the sutural angle, a character not mentioned by Candèze.

## ANOPLISCHIUS.

*Anoplischius*, Candèze, Monogr. Elat. ii. p. 49 (1859).

Of the fifty-five described species of *Anoplischius*, all but one are from Central or South America or the Antilles. It differs from *Ischiodontus* in having the coxal plates obliquely narrowing outwards from the dilated inner part, and not triangularly dilated towards the middle; many of the species, however, have the coxal plates feebly subangularly dilated at or before the middle, and these forms are more or less intermediate. In all the species of *Anoplischius* I have examined the prosternal process has an angular tooth or prominence before the apex. Twenty-three species are here enumerated from within our limits, eighteen of which are described as new.

*a*. Antennæ with the third joint small, very much shorter than the fourth . . Species 1–5.
*b*. Antennæ with the third and fourth joints subequal.
*a'*. The antennal joints densely punctured throughout.
*a''*. Prosternal sutures not or scarcely grooved in front; elytra greenish or with a greenish lustre; antennæ exceedingly elongate in the male . . . . . Species 6, 7.
*b''*. Prosternal sutures more or less grooved in front.
*a'''*. Prothorax and elytra concolorous—ferruginous, piceous, or brown.
*a*⁴. Prothorax rounded at the sides anteriorly; the hind angles not or scarcely divergent.
*a*⁵. Prothorax closely and coarsely punctured . . . . . Species 8.
*b*⁵. Prothorax finely and more sparsely punctured . . . . . Species 9, 10.
*b*⁴. Prothorax narrowing from the base; the hind angles divergent.
*c*⁵. Elytra moderately elongate.
*a*⁶. Prothorax closely punctured . . . . . Species 11.
*b*⁶. Prothorax sparsely punctured . . . . . Species 12, 13.
*d*⁵. Elytra very elongate . . . . . Species 14.
*b'''*. Prothorax partly rufous or flavous.
*c*⁴. Elytral pubescence uniform in colour . . . . . Species 15, 16.
*d*⁴. Elytral pubescence paler along the suture and margins . . . Species 17, 18.
*c'''*. Prothorax rufous or yellow . . . . . Species 19, 20.
*b'*. The antennal joints, or at least the basal ones (1 and 2 excepted), with a smooth line or carina along the middle above and beneath.
*c''*. Elytra narrower than the prothorax, the humeri excavate; hind angles of the prothorax incurved, very sharply carinate; mesosternum raised at the sides; colour black or piceous . . . . . Species 21.

*d''*. Elytra as wide as the prothorax; mesosternum not raised at the sides; colour testaceous or brownish-testaceous.

*d'''*. Hind angles of the prothorax not divergent; posterior coxal plates obliquely narrowing outwards . . . . . Species 22.

*e'''*. Hind angles of the prothorax divergent; posterior coxal plates subangularly widened inwards . . . . . Species 23.

## 1. **Anoplischius piliger.** (Tab. XIII. fig. 19, ♀.)

Moderately elongate, broad, piceous or pitchy-brown, shining, thickly clothed above and beneath with long fulvo-cinereous hairs, the legs pitchy-brown or fusco-testaceous. Head convex, short, densely, rugosely punctured, shallowly longitudinally depressed or sulcate in the middle between the eyes, the frontal carina moderately prominent, rounded anteriorly; antennæ rather slender, feebly serrate, extending to about the basal third of the elytra in the male, a little shorter in the female, joint 3 small, not much longer than 2. Prothorax convex, transverse, the sides rapidly converging from about the basal third, subparallel behind and slightly rounded in front; the hind angles considerably produced, parallel, finely carinate above; the surface very densely, rather finely punctate, and obsoletely canaliculate behind. Scutellum thickly punctured. Elytra three and one-half times the length of the prothorax, subparallel to about the middle, and narrowing thence to the apex; finely and rather deeply punctate-striate; the interstices almost flat, thickly and somewhat roughly punctured. Beneath thickly, rather coarsely punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides not raised; posterior coxal plates very feebly subangularly widened near the point of insertion of the femora.

Length 11–12, breadth $3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Sabo and Sinanja in Vera Paz (*Champion*).

Three examples. Smaller and less elongate than *A. atractodes*; the head and thorax more densely punctured, the latter parallel at the base and more transverse; the antennæ with the third joint very little longer than the second. The male, from Sabo, is in a bad state of preservation.

## 2. **Anoplischius glis.**

♂. *Heterocrepidius glis*, Cand. Monogr. Elat. ii. p. 38[1].

♀. *Anoplischius catulus*, Cand. loc. cit. p. 59[2].

*Hab.* MEXICO, San Andres Tuxtla in Vera Cruz (*Sallé* [1] [2]).

I have examined the types of these insects, both of which are contained in the Sallé collection. The type of *A. catulus* has the punctures of the elytral striæ finer than usual towards the suture, our other specimens being intermediate. The apical joint of the maxillary palpi is narrow and subtriangular. The antennæ are more elongate in the male than in the female; the third joint is short, not longer than the second.

## 3. **Anoplischius parvulus.**

Moderately elongate, rather convex; fuscous, the hind angles and the anterior margin of the prothorax, and the head also, sometimes ferruginous, the antennæ more or less fuscous, the legs testaceous, the under surface ferruginous; above and beneath thickly clothed with long fulvo-cinereous hairs. Head convex, opaque, very densely punctured, the punctures umbilicate; the frontal carina moderately prominent, reflexed, rounded anteriorly; the eyes distinctly granulated; antennæ rather slender, half the length of the body in the male, shorter in the female, joint 3 short, slightly longer than 2, 4 more than twice the length

of 3. Prothorax broader than long, convex, narrowing from about the basal third, the sides a little rounded anteriorly and parallel behind in the female, slightly sinuate behind in the male; the hind angles moderately produced, acute, slightly divergent in the male, obsoletely carinate above; the surface densely finely punctate, the punctures more scattered upon the basal declivity. Scutellum sparsely punctured. Elytra moderately long, subparallel to about the middle and narrowing thence to the apex; deeply punctate-striate, the interstices convex, flatter on the disc, sparsely punctured, transversely rugulose towards the base. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates obliquely narrowing outwards.

Length $6\frac{3}{4}$–$7\frac{1}{2}$, breadth $1\frac{3}{4}$–2 millim. (♂ ♀.)

*Hab.* Guatemala, Cubilguitz in Vera Paz (*Champion*).

Two males and one female. Closely allied to *A. glis*, Cand. (=*catulus*, Cand.), but narrower, and also differing from it in the much more finely punctured head and thorax, the punctures on the latter more scattered on the basal declivity (in *A. glis* the thorax is coarsely and uniformly punctured all over). The male resembles a small *Heterocrepidius* (*croceipes*, Germ.), but it has the apical joint of the maxillary palpi more triangular.

## 4. Anoplischius mus.

*Anoplischius mus*, Cand. Monogr. Elat. ii. p. 56 [1].

"Fuscus, dense cinereo-pubescens; fronte convexa, punctata; antennis obscure ferrugineis, articulo tertio quarto breviore; prothorace transverso, a basi angustato, subtiliter haud dense punctato; elytris medio subdilatatis, apice attenuatis, punctato-substriatis; abdomine apice rufescente; pedibus testaceis.—Long. 6, lat. $1\frac{3}{4}$ millim."

*Hab.* Mexico (*Klingelhöffer* [1]).

This small species is not represented in our collection. It has the thorax more sparsely punctured than in *A. parvulus*.

## 5. Anoplischius teapensis.

Moderately elongate, shining; piceous, the suture and under surface paler, the legs fusco-testaceous; above and beneath thickly clothed with long yellowish-cinereous hairs. Head rather convex, densely rugosely punctured, obsoletely canaliculate in the middle, the frontal carina moderately prominent, rounded anteriorly; antennæ elongate, extending to about the basal third of the elytra, feebly serrate, joint 3 stouter than, and twice the length of, 2, 4 nearly twice as long as 3. Prothorax rather convex, broader than long, the sides slightly rounded and converging from about the basal third, parallel behind; the hind angles moderately produced, parallel, finely carinate above; the surface densely, rather coarsely punctate, canaliculate behind. Scutellum thickly punctured. Elytra moderately long, parallel to about the middle and narrowing thence to the apex; finely and rather deeply punctate-striate; the interstices feebly convex, somewhat closely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front, approximate behind; mesosternum declivous, the sides not raised; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora.

Length $8\frac{1}{4}$, breadth $2\frac{1}{4}$ millim. (♂.)

*Hab.* Mexico, Teapa in Tabasco (*Höge*).

One male specimen. This species is allied to *A. glis*, Cand. (=*catulus*, Cand.), but is larger and more robust, and has the third joint of the antennæ nearly as wide as, though much shorter than, the fourth. *A. mus*, Cand., is an allied form.

### 6. **Anoplischius chalcopterus.** (Tab. XIII. fig. 23, ♂.)

Elongate, narrow, moderately convex, very shining; above pitchy-black, the hind angles of the prothorax usually ferruginous, the elytra varying in colour from ferruginous with a translucent æneous lustre to æneous or green; the antennæ ferruginous, the two basal joints piceous; the legs pitchy-brown; the under surface and epipleuræ ferruginous, the prothorax sometimes piceous; above and beneath somewhat sparsely clothed with long greyish-brown hairs. Head rather sparsely punctured, deeply triangularly excavate in the middle in front in the male, shallowly so in the female, and with an exceedingly prominent frontal carina, which is rounded anteriorly, the eyes large and smooth; antennæ extending to beyond the middle of the elytra in the male, not half the length of the body in the female, rather slender, joints 3 and 4 subequal. Prothorax trapezoidal, broader than long, flattened on the disc, slightly compressed at the sides before the middle; the hind angles narrow, greatly produced, and divergent, sharply carinate above; the surface very finely, sparsely punctate. Scutellum with a few scattered punctures. Elytra fully four and one-quarter times the length of the prothorax, rapidly narrowing from about the middle in the male, more parallel in the female; finely striate-punctate, the punctures widely separated; the interstices flat, sparsely, very finely punctate. Beneath finely and very sparsely punctured; prosternal sutures rather widely separated throughout, not excavate in front; mesosternum declivous; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora, and becoming very narrow outwards. Legs very elongate; tarsi with joint 2 feebly, and 3 strongly, lamellate beneath.

Length $9\frac{1}{2}$–15, breadth $2\frac{1}{2}$–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

Twelve males and one female. This species differs from all others of the genus yet described in its metallic-green or æneous elytra. In general shape it approaches *A. longipennis* and *A. conicicollis*, Cand. The antennæ are very elongate in the male. The insect is unknown to Dr. Candèze.

### 7. **Anoplischius semiæneus.**

Elongate, narrow, moderately convex, very shining; the head piceous, the prothorax piceo-ferruginous, the elytra greenish-æneous, the antennæ, the two basal joints excepted, epipleuræ, and under surface ferruginous, the legs fusco-ferruginous; above and beneath rather sparsely clothed with long fulvo-cinereous hairs. Head closely, rather coarsely punctate, transversely depressed in front, the frontal carina prominent, the eyes large and smooth; antennæ as in *A. chalcopterus*. Prothorax nearly as long as broad, convex, subconical, the sides sinuate before and behind the middle; the hind angles strongly produced, moderately divergent, sharply carinate above; the surface closely, rather coarsely punctate. Scutellum sparsely punctured. Elytra three and one-half times the length of the prothorax, narrowing from the middle; moderately finely striate-punctate, the punctures somewhat closely placed; the interstices flat, sparsely, finely punctate. Beneath thickly, rather coarsely punctate; prosternal sutures not excavate in front.

Length $9\frac{1}{4}$, breadth $2\frac{1}{4}$ millim. (♂.)

*Hab.* GUATEMALA (*Sallé*).

One specimen. Closely allied to *A. chalcopterus*, and differing as follows:—The head in the male transversely depressed in front, the frontal carina less prominent; the thorax more convex, less widened posteriorly, the sides distinctly sinuate behind, the hind angles less divergent, the surface more coarsely and more closely punctate; the elytra not so finely striate-punctate; the under surface more coarsely and not so sparsely punctured.

### 8. **Anoplischius melanotides.**

*Anoplischius melanotides*, Cand. Monogr. Elat. ii. p. 60 [1].

*Hab.* MEXICO, Yucatan (*coll. Chevrolat* [1]).

Two female specimens of this species are contained in the Janson collection.

### 9. **Anoplischius atractodes.**

*Anoplischius atractodes*, Cand. Monogr. Elat. ii. p. 61 [1].

*Hab.* MEXICO [1], Tuxtla, Cordova (*Sallé*), Jalapa (*Höge*); NICARAGUA, Chontales (*Belt*).

The Nicaraguan specimens differ from those from Mexico in having the thorax more finely punctured.

### 10. **Anoplischius sobrinus.**

Elongate, subfusiform, convex, shining, obscure reddish-brown, the antennæ, legs, and epipleuræ ferruginous; above and beneath somewhat thickly clothed with yellowish-cinereous hairs. Head convex, coarsely, closely punctate, the frontal carina slightly deflexed in the middle, the eyes large and smooth; antennæ short and slender, extending very little beyond the humeri in the female, slightly longer in the male, joints 3 and 4 equal. Prothorax much broader than long, moderately convex, the sides slightly rounded and converging from the base; the hind angles moderately produced, incurved at the tip, and sharply carinate above; the usual impressions on the basal margin almost obsolete; the surface very finely, sparsely punctate, rather deeply canaliculate behind. Scutellum with a few minutely scattered punctures. Elytra moderately elongate, narrowing almost from the base; finely and lightly punctate-striate, the interstices flat on the disc, feebly convex at the sides, sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates subangularly widened opposite the point of insertion of the femora.

Length 11–11½, breadth 3–3¼ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Three specimens. Allied to *A. variabilis*, but differing from it in having the thorax slightly rounded at the sides in both sexes, the hind angles shorter, not divergent, and sharply carinate above, and the usual impressions on the basal margin almost obsolete; the frontal carina is slightly deflexed in the middle.

### 11. **Anoplischius mexicanus.** (Tab. XIII. fig. 20, ♂.)

Moderately elongate, rather convex, shining, varying in colour from piceous with the elytra pitchy-brown to entirely reddish-brown, the epipleuræ ferruginous, the antennæ and legs ferruginous or obscure ferruginous; above and beneath somewhat thickly clothed with long yellowish-cinereous hairs. Head convex, densely, rather coarsely punctate, the frontal carina moderately prominent; eyes large, finely granulated; antennæ short, rather slender, joints 3 and 4 equal in length. Prothorax convex, broader than long, trapezoidal, the sides rapidly converging in a straight line from the base to the apex; the hind angles strongly produced, divergent, feebly carinate above; the surface closely, somewhat coarsely punctate, obsoletely canaliculate or with a smooth line in the middle behind. Scutellum thickly punctured. Elytra moderately elongate, rather broad, parallel to the middle and gradually narrowed beyond; finely and lightly punctate-striate, the punctures becoming a little coarser and closer towards the sides; the interstices flat on the disc, feebly convex at the sides, finely and somewhat closely punctate. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides not raised; posterior coxal plates feebly subangularly widened near the point of insertion of the femora.

Length 12–13½, breadth 3¼–4 millim. (♂.)

*Hab.* MEXICO (*coll. Janson*), Cordova (*Sallé*).

Two specimens. This insect is allied to *A. variabilis*, from which it differs in its more parallel shape, more distinctly granulated eyes, and closely punctured thorax.

## 12. **Anoplischius variabilis.**

Elongate, subfusiform, convex, shining; varying in colour from piceous or pitchy-brown to brownish-ferruginous, the antennæ pitchy-brown, brown, or ferruginous, the legs fusco-testaceous; above and beneath somewhat thickly clothed with long fulvo-cinereous hairs. Head convex, coarsely, closely punctate, in some specimens slightly sulcate in the middle between the eyes, the frontal carina moderately prominent, rounded anteriorly; the eyes large and smooth; antennæ slender, not half the length of the body in the male, shorter in the female, joints 3 and 4 equal. Prothorax moderately convex, broader than long, trapezoidal; the hind angles strongly produced, acute, divergent, finely carinate above; the surface sparsely, finely punctate, more or less distinctly canaliculate behind. Scutellum sparsely punctured. Elytra moderately elongate, narrowing from about the basal third; finely punctate-striate, the interstices flat on the disc, feebly convex at the sides, sparsely, minutely punctate. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates feebly subangularly widened near the point of insertion of the femora.

Length 10–12½, breadth 2¾–3½ millim. (♂ ♀.)

*Hab.* BRITISH HONDURAS (*coll. Janson*); GUATEMALA, Panima, San Juan, and Senahu in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Numerous examples. This species is chiefly distinguished by its trapezoidal, sparsely punctured thorax, the hind angles of which are divergent, acute, and feebly carinate, the large and almost smooth eyes, and subfusiform shape. The colour of the body, and of the antennæ also, is variable. From *A. mexicanus* it may be known by its more attenuate elytra and sparsely punctured thorax; and from *A. atractodes* by having the thorax narrowed from the base, with the hind angles strongly divergent. In some specimens the frontal carina is a little less prominent than usual. The insect is deceptively like *Spilus ciliaticornis* and *Ischiodontus ichthydius*, both of which inhabit several of the same localities. The species is unknown to Dr. Candèze.

## 13. **Anoplischius furvus.**

Moderately elongate, subfusiform, convex, shining, pitchy-brown, the epipleuræ and legs more or less ferruginous, the suture brownish, the antennæ piceous or pitchy-brown; above and beneath somewhat thickly clothed with long cinereous hairs. Head convex, densely, rather coarsely punctate, feebly transversely depressed in front, the frontal carina moderately prominent, somewhat truncate anteriorly; eyes rather small, distinctly granulated; antennæ short, very little longer in the male than in the female, joints 3 and 4 equal in length. Prothorax convex, trapezoidal, a little rounded at the sides in front in the female; the hind angles strongly produced, divergent, carinate above; the surface closely, moderately finely punctate. Scutellum with a few scattered punctures. Elytra moderately long, gradually narrowing from the base; somewhat coarsely punctate-striate, the interstices convex and sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora.

Length 9½–10, breadth 2½–2¾ millim. (♂ ♀.)

*Hab.* GUATEMALA, Senahu in Vera Paz (*Champion*).

Three specimens. This species is very like *A. variabilis*; but it may be known from that insect by the smaller and distinctly granulated eyes, the shorter antennæ in both sexes, the convex elytral interstices, the coarser and closer puncturing of the thorax, and the transversely depressed front. The antennæ are finely ciliate along their inner edge in both sexes, but more distinctly in the male.

### 14. **Anoplischius lucidus.** (Tab. XIV. fig. 5, ♀.)

Elongate, rather broad, moderately convex, very shining; the head and prothorax pitchy-black, the elytra obscure castaneous, the legs and under surface in great part piceous, the antennæ reddish-brown; above and beneath sparsely clothed with long fulvo-cinereous hairs. Head feebly convex, densely, rather coarsely punctured, the frontal carina very prominent, truncate anteriorly, the eyes large and smooth; antennæ slender, about twice the length of the prothorax, feebly serrate, joints 3 and 4 subequal in length. Prothorax transverse, trapezoidal, feebly convex; the hind angles considerably produced, narrow, feebly carinate above, thickly punctured; the surface finely, rather sparsely punctate, obsoletely canaliculate behind. Scutellum thickly punctured. Elytra four and one-half times as long as the prothorax, parallel to near the middle and narrowing thence to the apex, the apices conjointly rounded; finely and lightly punctate-striate, the punctures somewhat widely separated; the interstices almost flat on the basal portion of the disc, becoming slightly convex towards the sides and apex, sparsely, finely punctate, the punctures similar to those of the striæ. Beneath finely, rather sparsely punctate; prosternal sutures feebly excavate in front; mesosternum declivous, the sides not raised. Anterior and intermediate tarsi with joints 1–3, and the hind tarsi with joints 2 and 3, lamellate beneath.

Length $15\frac{1}{2}$, breadth $4\frac{1}{4}$ millim. (♀.)

*Hab.* GUATEMALA, Sinanja in Vera Paz (*Champion*).

One specimen. Allied to *A. longipennis*, Cand., but differing from that insect in its shorter antennæ, less elongate elytra, more prominent frontal carina, &c. Larger and much more elongate than *A. variabilis*, the prosternal sutures not deeply excavate in front.

### 15. **Anoplischius maculicollis.** (Tab. XIV. fig. 3, ♂.)

Moderately elongate, narrow (♂), rather broad (♀), the head, prothorax, and under surface shining, the elytra subopaque; black; the prothorax orange-yellow, with the apical margin, the hind angles, a triangular patch at the centre of the basal margin, and a large patch on the middle of the disc, extending to the base and apex, black; above and beneath thickly clothed with long hairs, which partake of the ground-colour; the legs and antennæ black, thickly pilose. Head densely, rugosely punctured, broadly concave in front, the frontal carina very prominent, rounded anteriorly; antennæ extending to the middle of the elytra in the male, much shorter in the female, the joints from the third dilated and serrate, gradually decreasing in width and increasing in length in the male, 3–10 subequal in length in the female. Prothorax broader than long, trapezoidal, rounded at the sides in front in the female; the hind angles divergent, strongly produced, finely carinate above; the surface rather finely, moderately closely punctate, deeply canaliculate behind. Scutellum thickly punctured. Elytra (♂) nearly four, (♀) three and one-half times as long as the prothorax, in the male narrowing from the base, in the female subparallel and wider at the middle than at the base; finely, rather deeply punctate-striate, the sutural stria deeply impressed; the interstices flat on the disc, feebly convex at the apex, minutely shagreened and shallowly punctured. Beneath thickly punctured; prosternal sutures feebly excavate in front, equidistant; mesosternum declivous, the sides not raised.

Length, ♂ 8, ♀ 10 millim.; breadth, ♂ 2, ♀ $2\frac{3}{4}$ millim.

*Hab.* MEXICO, Omilteme 8000 feet, and Chilpancingo 4600 feet, both in Guerrero (*H. H. Smith*).

Two specimens. Amongst the various Central-American species allied to *A. pyronotus*, Cand., this perhaps approaches it the nearest, the antennæ being similarly formed in the male sex; the male, however, is narrower and more elongate than the corresponding sex of that insect, and has the thorax maculated with black. The sexes of *A. maculicollis* are very dissimilar in appearance.

### 16. **Anoplischius divisus.** (Tab. XIII. fig. 21, ♀.)

Moderately elongate, rather narrow, convex, subparallel, the head, prothorax, and under surface shining, the elytra subopaque; the head, antennæ, elytra, and legs (the knees excepted) black; the prothorax flavo-testaceous, with a very broad black median vitta, which is constricted behind; the under surface, the propleuræ excepted, black, the first ventral segment and the epipleuræ partly ferruginous; the upper surface thickly clothed with long, coarse, fulvo-cinereous hairs, the under surface more sparsely pilose. Head closely, rather coarsely punctate, broadly concave in front, and sulcate in the middle, the frontal carina prominent; antennæ extending to a little beyond the humeri, the joints from the third rather broadly widened, slightly longer than broad, 3 and 4 equal. Prothorax broader than long, convex, the sides subparallel behind, rounded and slightly converging in front; the hind angles strongly produced, slightly divergent, sharply carinate above; the surface thickly, rather finely punctate, deeply canaliculate behind. Scutellum thickly punctured. Elytra moderately long, parallel to the middle, and gradually narrowing beyond; rather deeply punctate-striate; the interstices feebly convex, minutely shagreened and somewhat roughly punctured. Beneath rather closely punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides feebly raised; posterior coxal plates feebly subangularly dilated opposite the point of insertion of the femora.

Length $7\frac{1}{3}$, breadth $2\frac{1}{2}$ millim. (♀.)

*Hab.* Guatemala, Zapote (*Champion*).

One specimen. Allied to *A. maculicollis*, but more convex, the hairs on the upper surface coarser and fulvo-cinereous in colour, the elytra more deeply punctate-striate and with the interstices slightly convex, the posterior coxal plates slightly widened opposite the point of insertion of the femora.

### 17. **Anoplischius elegans.** (Tab. XIII. fig. 25, ♀.)

Elongate, narrow, rather convex, shining; the head and antennæ black; the prothorax rufous, with the anterior margin, and a median vitta of variable width, widened in front and behind, black; the scutellum and elytra piceous or pitchy-brown, the latter indeterminately black at the apex and with the sides anteriorly or to near the apex, and sometimes the base also, fulvo-testaceous; above densely clothed with very long, coarse hairs, which on the front of the head, on a broad space on either side of the prothorax, and along the suture and sides of the elytra to near the apex, are yellowish-cinereous and decumbent, those on the rest of the upper surface being fuscous and semierect; beneath piceous, thickly clothed with very long, decumbent, cinereous or flavo-cinereous hairs; the legs varying in colour from fuscous with the femora testaceous at the base to almost entirely testaceous, thickly pilose. Head densely, rugosely punctured, broadly concave in front, and feebly sulcate in the middle, the frontal carina very prominent, rounded anteriorly; antennæ about reaching the middle of the elytra in the male, shorter in the female, the joints from the third rather broadly dilated, 3 and 4 equal. Prothorax convex, almost as long as broad, slightly narrowed in front; the hind angles strongly produced, slightly divergent, blunt at the tip, sharply carinate above; the surface densely, minutely punctate, deeply canaliculate behind. Scutellum thickly punctured. Elytra moderately elongate, gradually narrowing from the base in both sexes, conjointly, bluntly rounded at the apex; coarsely punctate-striate; the interstices narrow, feebly convex, closely, minutely punctate. Beneath rather sparsely punctured; prosternal sutures excavate in front,

equidistant; mesosternum declivous, the sides not raised; posterior coxal plates feebly subangularly widened near the point of insertion of the femora.

Length $6\frac{1}{2}$–$9\frac{3}{4}$, breadth $1\frac{2}{3}$–$2\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Numerous examples. This species, a specimen of which has been examined by Dr. Candèze, and returned as unknown to him, is allied to *A. maculicollis*, &c. The yellowish-cinereous hairs form a broad stripe on either side of the thorax, and a narrow stripe along the suture and lateral margins of the elytra to near the apex.

### 18. **Anoplischius lineatus.** (Tab. XIII. fig. 24, ♂, var.)

Elongate, narrow, rather convex, shining; the head and antennæ black; the prothorax rufous, with the anterior margin and a broad median vitta, obliquely narrowed behind and in one specimen not extending to the base, black; the scutellum and elytra piceous, the latter brownish towards the base, indeterminately black at the apex, and with the sides anteriorly fulvo-testaceous; above rather sparsely clothed with very long, coarse, semierect hairs, which on the head, the sides and base of the prothorax, and along the suture and sides of the elytra to near the apex, are cinereous or yellowish-cinereous, those on the rest of the upper surface being obscure fuscous; beneath piceous, sparsely clothed with long, decumbent, cinereous hairs; the legs pitchy-brown, the knees, the apices of the tarsi, and sometimes the base of the femora, testaceous, thickly pilose. Head coarsely, closely punctate, broadly concave in front, and feebly sulcate in the middle, the frontal carina very prominent; antennæ as in *A. elegans*. Prothorax convex, almost as long as broad, slightly narrowed in front; the hind angles strongly produced, subparallel, blunt at the tip, sharply carinate above; the surface moderately coarsely, somewhat closely punctate, very deeply canaliculate behind. Scutellum sparsely punctured. Elytra moderately long, gradually narrowing from the base, conjointly, bluntly rounded at the apex; coarsely punctate-striate; the interstices narrow, feebly convex, rather sparsely punctate. Posterior coxal plates feebly subangularly widened near the point of insertion of the femora.

*Var.* The prothorax rufous, with a very large triangular black patch extending from the apex to beyond the middle, the black also extending a little downwards along the lateral margin.

Length 7–$9\frac{3}{4}$, breadth $1\frac{3}{4}$–$2\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*E. M. Janson*); PANAMA, Bugaba (*Champion*).

Three specimens—two of the typical form from Bugaba and one of the variety from Chontales. Closely allied to *A. elegans*, but differing from it in the more coarsely and much less densely punctured thorax, and the more sparsely pilose upper surface, especially of the thorax, the pale hairs at the sides not forming a broad matted band as in that species.

### 19. **Anoplischius flavicollis.** (Tab. XIV. fig. 4, ♂.)

Elongate, rather narrow, somewhat depressed, the head, prothorax, and under surface shining, the elytra subopaque; the head, scutellum, and under surface black, the prothorax orange-yellow, the elytra bluish-black; above and beneath thickly clothed with long hairs, which partake of the ground-colour; the legs and antennæ black, densely pilose. Head densely, moderately finely punctate, broadly concave in front, the frontal carina very prominent, rounded anteriorly; antennæ in the male extending to the middle of the elytra, shorter in the female, the joints from the third broadly dilated and serrate, gradually decreasing in width, 3 and 4 equal. Prothorax strongly transverse, trapezoidal, the sides converging in almost a straight line from the base; the hind angles divergent, strongly produced, not or very feebly carinate above; the surface thickly, rather finely punctate, the punctures becoming still finer towards the base,

obsoletely canaliculate to near the apex. Scutellum thickly punctured. Elytra rather more than four times the length of the prothorax, in both sexes parallel to the middle, and narrowing thence to the apex, the apices conjointly rounded; finely punctate-striate, the interstices flat, minutely shagreened, thickly, very shallowly punctured. Beneath thickly punctured, the propleuræ almost smooth; prosternum shallowly grooved between the coxæ; prosternal sutures widely separated throughout, feebly grooved in front; mesosternum declivous, the sides a little raised.

Length $10\frac{1}{2}$–11, breadth $2\frac{3}{4}$–3 millim. (♂ ♀.)

*Hab.* MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Two specimens. Allied to the Cuban *A. pyronotus*, Cand., but longer and more parallel, the head more deeply excavate in front, the prosternal sutures widely separated throughout, &c. It differs from *A. sanguinicollis* in having the thorax more transverse, the elytra more elongate and more parallel, and the posterior coxal plates obliquely narrowing outwards.

### 20. **Anoplischius sanguinicollis.** (Tab. XIII. fig. 22, ♂.)

Moderately elongate, narrow, shining, black, the prothorax rufous or rufo-testaceous, above and beneath thickly clothed with long hairs, which partake of the ground-colour; the legs piceous, with the knees testaceous. Head densely, rugosely punctured, broadly concave in front, the frontal carina very prominent; antennæ extending nearly to the basal third of the elytra in the male, slightly shorter in the female, the joints from the third rather broadly dilated, gradually decreasing in width, 3 and 4 equal. Prothorax a little broader than long, trapezoidal; the hind angles divergent, greatly produced, finely carinate above; the surface finely, rather closely punctate, canaliculate behind. Scutellum sparsely punctured. Elytra moderately long, narrowing from a little below the base in the male, more parallel in the female, the apices conjointly rounded; finely, rather deeply punctate-striate; the interstices almost flat, thickly punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front, narrowly separated behind; mesosternum declivous, the sides feebly raised; posterior coxal plates feebly subangularly widened near the point of insertion of the femora.

Length $6\frac{1}{2}$–$7\frac{1}{2}$, breadth $1\frac{3}{4}$–2 millim. (♂ ♀.)

*Hab.* GUATEMALA, Senahu in Vera Paz (*Champion*).

Numerous examples. Closely allied to the Cuban *A. pyronotus*, Cand., but smaller, narrower, and less robust, the thorax more sparsely and less coarsely punctured, the antennæ much shorter in the male, &c.

### 21. **Anoplischius laticollis.**

*Dicrepidius laticollis*, Eschsch. in Thon's Archiv, ii. 1, p. 31 [1].

*Dipropus laticollis*, Germ. Zeitschr. für Ent. i. p. 216 [2].

*Anoplischius laticollis*, Cand. Monogr. Élat. ii. p. 74, t. 1. fig. 10 [3]; Steinh. Col. Hefte, xiv. p. 115 [4].

*Hab.* PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—COLOMBIA [4]; ECUADOR; GUIANA; BRAZIL [1–3].

This curious species is not uncommon in Chiriqui. It has the sides of the mesosternum thickened and raised, in this respect approaching *Atractosomus*, in which it would be equally well placed. The elytra are elongate, narrower than the thorax, and

rapidly narrowed from the base; the shoulders are excavate for the reception of the hind angles of the thorax, these latter being very sharply carinate. The eyes are large and smooth.

### 22. **Anoplischius foveifrons.** (Tab. XIV. fig. 6, ♂.)

Moderately elongate, rather depressed, shining, testaceous, above and beneath somewhat thickly clothed with long fulvous hairs. Head rather convex, coarsely, closely punctate, transversely depressed in the middle between the eyes, the frontal carina prominent, rounded anteriorly; antennæ moderately stout, feebly serrate, extending to about the basal fourth of the elytra in the male, shorter in the female, the third and following joints with indications of a smooth median line, 3 and 4 equal in length. Prothorax strongly transverse, the sides very feebly sinuate or subparallel behind and rounded anteriorly; the hind angles subparallel, considerably produced, sharply carinate above; the surface closely, rather coarsely punctate, canaliculate behind. Scutellum almost smooth. Elytra moderately long, subparallel to near the middle and narrowing thence to the apex, the humeri excavate for the reception of the hind angles of the prothorax, the apices conjointly rounded; finely striate-punctate, the punctures widely separated from each other (in one specimen not coarser than those of the interstices towards the suture); the interstices flat, sparsely, finely punctate. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides not raised.

Length $10\frac{1}{2}$–$11\frac{1}{2}$, breadth $2\frac{3}{4}$–3 millim. (♂ ♀.)

*Hab.* MEXICO (*coll. Janson*); PANAMA, Obispo (*Salvin*).

Two examples—a male from Panama and a female from Mexico. This insect resembles *A. transversus*, Cand., from Colombia, but differs from the type (♀) of that insect in having the head transversely depressed between the eyes, the thorax more closely and more coarsely punctured, and the elytra more distinctly seriate-punctate. In the Panama specimen (♂) the punctures of the striæ are confused with those of the interstices towards the suture; in the Mexican example (♀) the punctures of the inner striæ are coarser, larger than those of the interstices. The Panama specimen is figured.

### 23. **Anoplischius pallidus.**

Moderately elongate, narrow, rather depressed, shining, testaceous or brownish-testaceous, thickly clothed with long fulvous hairs. Head moderately convex, coarsely, closely punctate, the frontal carina prominent, rounded anteriorly; antennæ rather stout, feebly serrate, in the male extending to the basal third of the elytra, shorter in the female, the third and following joints obsoletely carinate along the middle, 3 and 4 equal in length. Prothorax slightly broader than long, the sides almost straight, gradually converging from the base, feebly rounded in front; the hind angles divergent, strongly produced, very sharply carinate above; the surface sparsely, coarsely punctate, obsoletely canaliculate behind. Scutellum sparsely punctured. Elytra three times the length of the prothorax, narrowing from about the basal third, the apices narrow and conjointly rounded; finely and shallowly punctate-striate, the punctures becoming coarser at the sides and rather widely separated; the interstices almost flat, sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides not raised; posterior coxal plates feebly subangularly widened opposite the point of insertion of the femora.

Length $8\frac{1}{2}$–$10\frac{1}{4}$, breadth $2\frac{1}{4}$–$2\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Seven specimens, four of which are males. Allied to *A. transversus* and *A. fovei-*

*frons*; but differs from both in the less transverse thorax, the sides of which are oblique and the hind angles divergent, and also in the subangularly dilated posterior coxal plates. The species is unknown to Dr. Candèze.

## CREPIDIUS.

*Crepidius*, Candèze, Monogr. Elat. ii. p. 80 (1859).

A genus containing ten described species—eight from South America and two from the island of Guadaloupe. One of the South-American forms extends northwards to Nicaragua.

### 1. **Crepidius emarginatus.** (Tab. XIV. fig. 1, ♀.)

*Crepidius emarginatus*, Cand. Monogr. Elat. ii. p. 84 [1].

*Hab.* NICARAGUA, Chontales (*Belt, E. M. Janson*).—BRAZIL [1].

I have seen eight specimens of this species from Chontales, all females but one, the latter in mutilated condition, without legs or antennæ.

A female specimen named by Candèze is contained in the Janson collection; this is from the original locality, Brazil.

## ISCHIODONTUS.

*Ischiodontus*, Candèze, Monogr. Elat. ii. p. 90 (May 1859).
*Tricrepidius*, Motschulsky, Bull. Mosc. xxxii. 2, p. 366 (1859).

This is a genus containing seventy described species, all American *, ranging from the Southern United States to Uruguay. Of this number, no less than sixty-five are from Tropical America, three of these inhabiting the Antilles. Forty-five species are here enumerated from within our limits, twenty-four of which are described as new. Amongst the latter, it may be noted that a considerable number have metallic elytra—one of these, *I. resplendens*, being, perhaps, the most brilliantly coloured species of the family known as yet from Tropical America; very few forms of this kind have been described by Candèze. The genus *Ischiodontus* is an extremely difficult one to deal with, many of the species being very variable in colour and size, and also varying in different localities. The females, too, often differ considerably from the males, and they cannot always be satisfactorily located unless accompanied by their respective partners. In some few species, *I. atrocæruleus*, *I. resplendens*, *I. marginatus*, *I. denticornis*, and

* *I. hawaiensis*, Cand., from the Sandwich Is., is probably an introduced American species, like *Chalcolepidius erythroloma*.

*I. griseipilis*, the prosternal sutures, as in *Crepidius*, are not, or very feebly, grooved in front; in three, *I. erythroderus*, *I. melas*, and *I. rufiventris*, the sides of the mesosternal cavity are rapidly and obliquely declivous, these insects forming a transition to the genus *Spilus*; and in one, *I. aterrimus*, a close ally of *I. melas*, the mesosternum is formed as in those species here placed at the end of *Atractosomus*. Good sexual characters are to be found in the form of the antennæ in nearly all the species with a large third joint (*I. carinicornis* and its allies excepted) to the antennæ; but in those with a small third antennal joint there is very little sexual difference, the antennæ being comparatively short in both sexes. In all the species here referred to *Ischiodontus* the prosternal process is sharply angulate before, as well as at, the apex; and the posterior coxal plates are angularly widened, in some species with a triangular dilatation behind, opposite the point of insertion of the femora. In *I. carinicornis* and some few South-American forms the antennæ are very distinctly carinate.

A. Antennæ with the third joint nearly or quite as large as the fourth.
  *a*. Mesosternum with the sides of the cavity not or feebly raised, gradually declivous; prosternal sutures (except in *I. atrocæruleus, I. resplendens, I. marginatus,* and *I. denticornis*) deeply grooved in front.
    *a'*. Antennæ carinate, not much longer in the male than in the female . . Species 1.
    *b'*. Antennæ not carinate, much longer in the male than in the female.
      *a''*. Upper surface not metallic.
        *a'''*. Punctures on the head and prothorax simple or feebly umbilicate (umbilicate on the head in some of the species) . . . . . Species 2–16.
        *b'''*. Punctures on the head and prothorax distinctly umbilicate . . . Species 17–22.
      *b''*. Upper surface partly metallic.
        *c'''*. Prothorax black (variable in *I. chloropterus*).
          $a^4$. Elytra bluish-black, dull. . . . . Species 23.
          $b^4$. Elytra violaceous; abdomen black . . . . . Species 24.
          $c^4$. Elytra brilliant violaceous, metallic green at the base and apex; abdomen rufous . . . . . Species 25.
          $d^4$. Elytra æneous or green, or with an æneous lustre . . . . . Species 26–28.
        *d'''*. Prothorax rufous or rufo-testaceous, the elytra æneous or green . Species 29–31.
        *e'''*. Prothorax and elytra ferruginous or pitchy-red, the sides of the elytra infuscate and with an æneous lustre . . . . . Species 32.
      *c''*. Upper surface metallic—the head and prothorax æneous, the elytra green . . . . . Species 33.
  *b*. Mesosternum with the sides of the cavity considerably raised, obliquely declivous.
    *f'''*. Prosternal sutures not grooved in front; antennæ slender; body very elongate, cuneiform . . . . . Species 34.
    *g'''*. Prosternal sutures deeply grooved in front; antennæ rather broadly widened.
      $e^4$. Prothorax more or less rufous; elytra black . . . . . Species 35.

$f^4$. Prothorax and elytra deep black.
$a^5$. Abdomen black . . . . . Species 36.
$b^5$. Abdomen rufous . . . . . Species 37.
*c*. Mesosternum with the sides of the cavity subhorizontally raised, somewhat abruptly declivous in front; prosternal sutures shallowly grooved in front. Body above and beneath deep black . . . . . Species 38.
B. Antennæ with the third joint small, not or very little longer than the second, the antennæ themselves very little longer in the male than in the female; mesosternum with the sides of the cavity not or feebly raised; prosternal sutures grooved in front.
*c'*. Elytra without distinct markings . . . . . Species 39–43.
*d'*. Elytra with a black marginal stripe on the anterior half. . . . . Species 44.
*e'*. Elytra bifasciate . . . . . Species 45.

1. **Ischiodontus carinicornis.** (Tab. XIV. figg. 7, ♂; 7 *a*, antenna; 7 *b*, genitalia, ♂.)

Elongate, broad, convex, shining; piceous, pitchy-brown, or obscure ferruginous, the hind angles of the prothorax more or less ferruginous within, the epipleuræ, antennæ, and legs ferruginous; above and beneath rather sparsely clothed with moderately long yellowish-cinereous hairs. Head closely, coarsely punctate, triangularly flattened or depressed in front, the frontal carina very prominent, rounded anteriorly; antennæ less than half the length of the body in the male, a little shorter in the female, the joints from the third considerably widened, becoming narrower outwards, above and beneath distinctly carinate along the middle, 3 and 4 equal. Prothorax convex, broader than long, gradually narrowing from the base, the sides a little rounded anteriorly in the male, more strongly so in the female; the hind angles strongly produced, slightly divergent, sharply carinate above; the surface closely, coarsely punctate, usually with a smooth narrow space along the middle extending from the centre to the base impunctate, deeply canaliculate behind. Elytra moderately long, in both sexes subparallel to the middle and narrowing thence to the apex; rather coarsely punctate-striate, the striæ (the first excepted) shallow; the interstices feebly convex (convex on the basal declivity), flat on the disc, sparsely, finely punctate. Beneath closely punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly dilated opposite the point of insertion of the femora.

Length $14\frac{1}{2}$–$17\frac{1}{2}$, breadth 4–$4\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Teleman and Panzos in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt, E. M. Janson*); PANAMA, Bugaba, Volcan de Chiriqui, Los Remedios (*Champion*).

Numerous examples. This species is intermediate, as it were, between the South-American *I. puncticollis* and *I. inornatus*, Cand., both of which have the third and following antennal joints distinctly carinate, a character not mentioned by Candèze in his descriptions. It is, however, nearest allied to *I. inornatus*, from which it differs in its much larger size, more elongate elytra, more depressed front, more prominent frontal carina, and slightly longer antennæ in both sexes. In general shape it resembles *I. puncticollis*. I have examined nine specimens of *I. inornatus* determined by Candèze, and also many others recently found by Mr. H. H. Smith in the island of Grenada. A male of *I. carinicornis* from the Volcan de Chiriqui is figured on our Plate.

## 2. Ischiodontus pinguis.

*Ischiodontus pinguis,* Cand. Monogr. Elat. ii. p. 100 [1].

*Hab.* Mexico [1], Cordova (*Sallé*).

Two female specimens from Cordova in the Sallé collection are labelled with the above name, apparently on Dr. Candèze's authority, and I somewhat doubtfully refer a male from the same locality to *I. pinguis*. The description was evidently taken from female specimens. The Cordova male resembles the same sex of *I. anceps*, but it is much more parallel and has the antennæ a little less elongate, the joints similarly widened. *I. pinguis* is compared by Candèze with *I. inornatus*, but that insect has the antennæ carinate.

## 3. Ischiodontus yucatecus.

Moderately elongate, convex, shining; varying in colour from pitchy-black to brown or reddish-brown, the prothorax with the hind angles ferruginous, sometimes entirely of that colour, the antennæ infuscate or brownish, the legs and epipleuræ ferruginous; above and beneath thickly clothed with rather long yellowish-cinereous hairs. Head closely, coarsely punctate, triangularly depressed in front, the depression deeper in the male than in the female, the frontal carina moderately prominent, rounded anteriorly; antennæ about half the length of the body in the male, shorter in the female, the joints from the third rather broadly widened, becoming narrower outwards, 3 and 4 equal. Prothorax convex, much broader than long, narrowing from about the middle forwards, the sides subparallel behind and rounded in front; the hind angles not or feebly divergent, carinate above; the surface coarsely, rather closely punctate, deeply canaliculate behind. Elytra rather short, narrowing from about the middle in both sexes; coarsely punctate-striate, the interstices feebly convex and sparsely punctured. Beneath coarsely, somewhat thickly punctate; prosternal sutures very deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length 7–9½, breadth 2–2½ millim. (♂ ♀.)

*Hab.* Mexico, Yucatan (*coll. Janson*), Temax in North Yucatan (*Gaumer*); Honduras (*coll. Candèze*).

Sent in abundance from Yucatan. This small, convex species is allied to *I. tuspanus*, but it is much smaller and has less elongate elytra. A very small female specimen from Playa Vicente may belong to the same species; it has the thorax canaliculate along the middle to near the apex. From the North-American *I. fuscus*, Lec., it may be known by its more transverse thorax and the rounded (not truncate) frontal carina.

## 4. Ischiodontus vetulus.

*Ischiodontus vetulus,* Cand. Monogr. Elat. ii. p. 116 [1].

*Dicrepidius villosus,* Pilate, in litt.

*Hab.* Mexico (*coll. Chevrolat* [1]), Yucatan (*Pilate, in coll. Janson*).

We are indebted to M. Fleutiaux of Paris for the loan of the type of this species, a male, and there are two others, also males, in the Janson collection. *I. vetulus* chiefly differs from its allies in having the entire surface of the thorax densely, coarsely punctate, and the pubescence dense and very long. The antennæ are elongate, and more slender than in *I. anceps* and its allies.

### 5. **Ischiodontus depressus.**

*Ischiodontus depressus,* Cand. Monogr. Elat. ii. p. 115 [1].

*Hab.* Mexico [1].

I have before me two specimens of this species determined by Candèze; both are males. *I. depressus* resembles *I. badius*, but differs from it in having the punctures on the head and thorax finer and not distinctly umbilicate, and the elytra deeply punctate-striate. It is more parallel and less convex than *I. anceps* and its allies, and has the third and following antennal joints more produced at their inner apical angle.

### 6. **Ischiodontus tuspanus.**

*Ischiodontus tuspanus,* Cand. Monogr. Elat. ii. p. 113 [1].

*Hab.* Mexico [1], Tuxtla (*Sallé*), Teapa (*Pilate, in coll. Janson*); British Honduras (*coll. Janson*), R. Hondo (*Blancaneaux*); Guatemala, Yzabal (*Sallé*), Coban (*Conradt*); Nicaragua, Chontales (*Belt, E. M. Janson*).

The specimens of this species described by Candèze are reddish-brown or castaneous in colour; but this colour is not constant, many of our examples having the head and thorax (the hind angles excepted) infuscate or piceous, and the elytra slightly infuscate, or with the apex darker. *I. tuspanus* is closely allied to *I. anceps*, but it is lighter in colour; the antennæ are less elongate in the male; the elytra are more parallel in both sexes, narrowing from about one-third from the base in the male and from the middle in the female. The antennæ are ferruginous, about half the length of the body in the male, shorter in the female, the joints from the third rather broadly widened, becoming narrower outwards.

### 7. **Ischiodontus posticus.** (Tab. XIV. fig. 8, ♂.)

*Ischiodontus posticus,* Cand. Elat. Nouv. v. p. 22 [1].

*Hab.* British Honduras [1] (*coll. Janson*); Guatemala (*Sallé*), Coban (*Conradt*), Sabo and San Gerónimo in Vera Paz (*Champion*).

Closely allied to *I. anceps*, Cand., and with the head and antennæ formed as in that species, but differing from it in having the elytra reddish-brown, with the apical third black. Two males from San Gerónimo, Guatemala, perhaps belong to the same species; they have the thorax lighter in colour and more coarsely punctured. A male from Coban is figured.

### 8. **Ischiodontus elongatus.**

Very elongate, moderately convex, rather shining; variable in colour—reddish-brown, with the sides of the elytra in some specimens broadly infuscate, or pitchy-brown, with the hind angles of the prothorax and the suture obscure ferruginous; the antennæ, epipleuræ, and legs ferruginous; above and beneath

somewhat thickly clothed with long cinereous hairs. Head closely, coarsely punctate, the punctures more or less umbilicate, the front triangularly depressed in the male, the frontal carina prominent, rounded anteriorly; antennæ in the male extending to about the middle of the elytra, much shorter in the female, with the joints from the third rather broadly widened, becoming gradually narrower outwards, joints 3 and 4 equal. Prothorax broader than long, the sides gradually converging from the base, a little rounded anteriorly in the female; the hind angles moderately produced, slightly divergent, a little incurved at the tip, carinate above; the surface thickly, coarsely punctate, deeply canaliculate behind. Elytra elongate, gradually narrowing from the base in the male, subparallel to the middle in the female; coarsely punctate-striate, the interstices feebly convex at the sides, flat on the disc, and sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length $10\frac{1}{2}$–$13\frac{1}{2}$, breadth $2\frac{1}{2}$–$3\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* MEXICO (*coll. Janson*), Chilpancingo, Cuernavaca (*H. H. Smith*), Juquila in Oaxaca (*Sallé*).

Seven specimens. The three from Juquila are reddish-brown, with the elytra infuscate at the sides, these examples resembling *I. marginatus* in colour. In the coarse punctuation of the head and thorax this insect approaches *I. badius*, but it differs from that species in its narrow, elongate shape. The specimen in the Janson collection is labelled *I. angustipennis*, from which it may be known by its much more elongate shape, less densely punctured thorax, and smoother elytral interstices. The more parallel and narrower shape, and the more equally widened antennal joints in the male, separate it from *I. anceps*, of which it may prove to be an extreme variety.

### 9. **Ischiodontus angustatus.** (Tab. XIV. fig. 9, ♂.)

Moderately elongate, narrow, rather convex, shining; ferruginous, the legs and antennæ testaceous; above and beneath clothed with long yellowish-cinereous hairs. Head densely, coarsely punctate, the punctures here and there transversely confluent, feebly triangularly depressed in front, the frontal carina not prominent; antennæ extending to the middle of the elytra, the joints from the third considerably widened, becoming narrower outwards, 3 and 4 equal. Prothorax subquadrate, about as long as broad, the sides subparallel, slightly converging in front; the hind angles moderately produced, feebly divergent, carinate above, slightly incurved at the tip; the usual notches on the basal margin almost obsolete; the surface thickly, rather coarsely punctate, the punctures becoming slightly umbilicate at the sides, canaliculate behind. Elytra three times the length of the prothorax, gradually narrowing from a little below the base; coarsely punctate-striate; the interstices convex throughout, sparsely and rather roughly punctured. Beneath thickly punctured; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length 8, breadth 2 millim. (♂.)

*Hab.* GUATEMALA, Champerico (*Champion*).

A single specimen, found on the Pacific coast at Champerico. This species resembles *I. angustipennis*; but it is smaller and narrower *, the punctures on the thorax are finer, more scattered, and slightly umbilicate at the sides only, the elytral interstices convex throughout and more sparsely punctured.

### 10. **Ischiodontus subparallelus.**

Elongate, narrow, moderately convex, subparallel; pitchy-black, shining, the antennæ rufo-ferruginous, the

* It is narrower than represented by our artist.

intermediate joints slightly infuscate in one specimen, the epipleuræ and legs ferruginous; above and beneath rather sparsely clothed with long yellowish-cinereous hairs. Head coarsely, moderately closely punctate, deeply transversely depressed in front in the male, feebly so in the female, the frontal carina prominent, rounded anteriorly; antennæ half the length of the body in the male, much shorter in the female, the joints from the third considerably widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, convex, the sides gradually converging from the base, a little rounded anteriorly; the hind angles moderately produced, slightly divergent, carinate above; the surface very sparsely, finely punctate, canaliculate behind. Elytra nearly four times as long as the prothorax, parallel to the middle and gradually narrowing beyond, the apices conjointly rounded; with rows of rather fine scattered punctures placed upon almost obsolete striæ; the interstices flat on the disc, feebly convex at the sides, and convex on the basal declivity, very sparsely punctate. Beneath sparsely punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length $10\frac{1}{3}$–12, breadth $2\frac{1}{2}$–3 millim. (♂ ♀.)

*Hab.* Costa Rica, Volcan de Irazu (*Rogers*).

Two females and one male. Closely allied to *I. anceps*, Cand., but differing from that insect in its narrow subparallel shape in both sexes, the antennæ less elongate in the male, the elytra relatively more elongate.

## 11. **Ischiodontus atricornis.**

Elongate, rather convex, shining; extremely variable in colour—usually brown or reddish-brown, with the head black, and the apical third of the elytra indeterminately, and often the sides also, more or less infuscate; the prothorax obscure rufous, often with an infuscate patch on the anterior part of the disc, sometimes entirely rufous, or piceous with the hind angles only lighter; the elytra sometimes piceous, with the suture brownish or ferruginous; the antennæ black or infuscate; the legs and under surface ferruginous or fusco-ferruginous; above and beneath thickly clothed with long yellowish-cinereous hairs. Head coarsely, closely punctate, triangularly depressed in front, deeply so in the male; the frontal carina prominent, rounded anteriorly; antennæ about half the length of the body in the male, shorter in the female, the joints from the third considerably widened, becoming slightly narrower outwards, 3 and 4 equal. Prothorax broader than long, the sides converging from the base, a little rounded anteriorly; the hind angles strongly produced, sharp, carinate above; the surface rather sparsely, coarsely punctate, the punctuation denser at the sides, canaliculate behind, and with a narrow smooth space down the middle. Elytra moderately elongate, gradually narrowing from the base in the male, more parallel in the female; rather coarsely punctate-striate; the interstices feebly convex at the sides, flatter on the disc, convex on the basal declivity, and sparsely punctured. Beneath somewhat thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly dilated opposite the point of insertion of the femora.

Length $8\frac{1}{4}$–$13\frac{1}{2}$, breadth 2–$3\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Mexico, Tapachula in Chiapas (*Höge*); Guatemala (*Sallé*, *Rodriguez*), near the city (*Salvin*), Las Mercedes, San Isidro, Zapote, Capetillo (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Collected in abundance by myself at Capetillo. Closely allied to *I. anceps*, Cand., but with the antennæ infuscate or black, and less elongate in the male, the joints from the third not so sharply serrate and more equal in width, the elytra more gradually narrowed in this sex; the thorax is usually in part, or entirely, pitchy-red, and the elytra are brown or reddish-brown, with the apex and sides indeterminately

infuscate. In some of the smallest males the elytra are more parallel towards the base. The ferruginous or pitchy-red under surface and legs and lighter elytral pubescence distinguish *I. atricornis* from *I. erythroderus*, Cand. One of the varieties is coloured like *I. posticus*, Cand., but that species has the thorax black, the hind angles excepted, and the antennæ ferruginous. The insect is exceedingly variable in size and colour. Some Guatemalan specimens of this species are labelled *I. picipennis*, Cand., in the Janson collection, a name used by Steinheil for another member of the same genus. In Guatemala *I. atricornis* appears to be confined to the Pacific slope.

### 12. **Ischiodontus thoracicus.**

*Ischiodontus thoracicus*, Cand. Monogr. Elat. ii. p. 112[1].

"Niger, sparsim longe fulvo-pubescens; fronte prominula; prothorace rufo-sanguineo, longitudine latiore, a basi attenuato, inæqualiter fortiterque punctato; elytris parallelis, punctato-striatis; corpore subtus pedibusque rufescentibus.—Long. 10, lat. $2\frac{1}{2}$ millim."

*Hab.* Mexico (*Klingelhöfer*[1]).

Described from a single example.

### 13. **Ischiodontus chiriquensis.** (Tab. XIV. figg. 10, ♂; 10 *a*, genitalia, ♂.)

Elongate, narrow, moderately convex, shining; piceous or pitchy-brown, the hind angles of the prothorax, and sometimes the basal and apical margins also, ferruginous, this colour in a few examples extending to the greater part of the surface, leaving a transverse median fascia only infuscate, the suture usually reddish-brown; the antennæ black or pitchy-brown, the legs testaceous or obscure testaceous; above and beneath somewhat thickly clothed with long fulvous or fulvo-cinereous hairs. Head densely, rather coarsely umbilicate-punctate, deeply triangularly depressed in front in the male, shallowly so in the female; the frontal carina prominent, rounded anteriorly; the eyes large and smooth; antennæ more than half the length of the body in the male, much shorter in the female, the joints from the third moderately widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, moderately convex, the sides converging from the base, almost parallel in front in the male, slightly rounded in the female; the hind angles acute, strongly divergent in the male, moderately so in the female, carinate above; the surface sparsely, finely punctate, deeply canaliculate behind. Elytra moderately elongate, narrowing from about the middle in both sexes, but more parallel in the female; finely punctate-striate, the interstices feebly convex at the sides, flat on the disc, and sparsely punctured. Beneath rather sparsely punctate; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length 8–$9\frac{1}{2}$, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Collected in abundance on the slopes of the Volcan de Chiriqui. Allied to *I. anceps*, *I. nigricornis*, &c.; but much smaller and more parallel, the antennæ shorter and with the joints from the third much less widened, the punctures on the head coarse and umbilicate, the hind angles of the thorax divergent and acute, the coxal plates less widened opposite the point of insertion of the femora. Two specimens from Bugaba differ from those described in having the hind angles of the thorax obtuse at the tip and scarcely divergent. The species is not known to Dr. Candèze.

### 14. **Ischiodontus anceps.** (Tab. XIV. figg. 11, ♂; 11 *a*, antenna.)

*Ischiodontus anceps*, Cand. Monogr. Elat. ii. p. 116 [1].

*Hab.* Mexico [1], Puebla, Orizaba, Tuxtla, Cordova, Playa Vicente (*Sallé*), Cuernavaca, Teapa (*H. H. Smith*), Yautepec, Jalapa, Tapachula (*Höge*); British Honduras, R. Sarstoon, R. Hondo (*Blancaneaux*); Guatemala, Panzos, Teleman, Panima, and San Juan in Vera Paz, El Tumbador, El Reposo, Las Mercedes (*Champion*), Coban (*Conradt*); Nicaragua (*Sallé*), Chontales (*Belt*, *E. M. Janson*); Panama, Bugaba (*Champion*).

This is perhaps the commonest and most widely distributed species of the genus within our limits. It may be known from most of its allies by the elytra being narrowed from the base in both sexes; the antennæ in the male are very elongate, with the joints from the third broadly widened, becoming narrower outwards. The suture of the elytra is often brownish or ferruginous, the antennæ and legs being of the same colour. The head is triangularly excavate in front (in some specimens very deeply) in the male, flattened or slightly depressed in the female. The sexes, as usual, differ greatly in the length of the antennæ. The pubescence is yellowish- or fulvo-cinereous. The insect has been found in plenty at Jalapa and also in Guatemala. In a few specimens (♂ ♀) from Cordova and Jalapa the head is flattened or feebly transversely depressed in front and the elytra are rather more parallel; they are apparently varieties of this species. A male from Chontales is figured.

### 15. **Ischiodontus nigricornis.**

*Ischiodontus nigricornis*, Cand. Monogr. Elat. ii. p. 116 [1].

*Hab.* Mexico, Cordova [1], Toxpam (*Sallé*).

I have seen three specimens only of this species, all females. It is, perhaps, a variety of *I. anceps*, from which it differs in its infuscate or black antennæ.

### 16. **Ischiodontus balteatus.** (Tab. XIV. fig. 12, ♀.)

Elongate, moderately convex, shining; pitchy-red, the head, antennæ, and the sides of the elytra broadly from the base to the apex, black, the black on the elytra gradually extending inwards beyond the middle, the legs pitchy-brown; the under surface pitchy-red, the apex of the abdomen black; above and beneath rather sparsely clothed with long hairs, which are fuscous on the elytra and fulvo-cinereous on the other parts of the body. Head thickly and rather coarsely punctured, broadly triangularly depressed in front, the frontal carina prominent, rounded anteriorly; antennæ less than half the length of the body, the joints from the third moderately widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, moderately convex, gradually narrowing from the base, the sides a little rounded anteriorly; the hind angles moderately produced, slightly divergent, incurved at the tip, carinate above; the surface sparsely, finely punctate, obsoletely canaliculate down the middle, the channel deepening behind. Elytra elongate, gradually narrowing from the base; rather coarsely striate-punctate, the striæ (the first excepted) almost obsolete; the interstices flat (except on the basal declivity), sparsely punctured. Beneath somewhat thickly punctured; prosternal sutures deeply excavate in front; mesosternum gradu-

ally declivous; anterior process of the metasternum declivous in front; posterior coxal plates strongly triangularly dilated opposite the point of insertion of the femora.
Length $14\frac{1}{2}$, breadth $3\frac{1}{2}$ millim. (♀.)

*Hab.* Guatemala, San Gerónimo in Vera Paz (*Champion*).

One female specimen. This insect, at first sight, would appear to be a colour-variety of *I. erythroderus*, Cand.; but it differs from that species in having the sides of the mesosternum very gradually declivous, and not raised behind, and the anterior process of the metasternum less convex and more declivous in front. It is perhaps nearest allied to *I. nigricornis*, but may be known from it by its infuscate legs.

### 17. **Ischiodontus sus.**

*Ischiodontus sus*, Cand. Monogr. Elat. ii. p. 114, t. 2. figg. 9, 9 *a* (♀)[1].

*Hab.* Mexico[1], Puebla, Cordova (*Sallé*), Mescala in Guerrero (*H. H. Smith*), Chilpancingo, Jalapa (*Höge*).

Var. *α*. The punctures of the elytral striæ very coarse and deep; the interstices smoother and more convex. (♂.)

*Hab.* Mexico, Tres Marias Is. (*Forrer*).

Var. *β*. The punctures of the elytral striæ fine, the striæ themselves very sharply defined; the interstices smoother, almost flat, rather sparsely punctate; length $13\frac{1}{2}$–$14\frac{1}{2}$ millim. (♀.)

*Hab.* Mexico (*coll. Janson, ex Candèze*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Guanajuato (*Sallé*).

This species has the punctures of the head and thorax very coarse, close, and umbilicate, the elytral striæ sharply defined, and the interstices roughly punctured towards the base. The males are less elongate and more convex than in the closely allied *I. rufulus*. I have seen nine examples of the typical form, and three of each of the varieties. In some specimens the thorax has a smooth narrow space down the middle, which is deeply impressed at the base.

### 18. **Ischiodontus rufulus.**

*Anoplischius rufulus*, Cand. Monogr. Elat. ii. p. 58[1].

*Hab.* Mexico, Orizaba (*coll. Chevrolat*[1]), Jalapa (*Höge*), Guanajuato, Yolos (*Sallé*); Guatemala (*Sallé*).

The type of this species, a female, has been kindly communicated by M. Fleutiaux. We have received a long series of it from Jalapa, and also numerous specimens from other localities. The males have very elongate antennæ. The punctures on the head and thorax are coarse and umbilicate. The insect is larger and much more elongate than the allied *I. angustipennis*. A male from Jalapa is figured.

### 19. **Ischiodontus angustipennis.**

*Ischiodontus angustipennis*, Cand. Monogr. Elat. ii. p. 115 [1].

*Hab.* MEXICO [1] (*Sallé, ex coll. Sturm*), Tepetlapa in Guerrero (*H. H. Smith*).

We have received two males and two females of this species from Tepetlapa; the males agree well with Candèze's type. It is very closely allied to *I. rufulus*, but is considerably smaller, and has less elongate elytra and less divergent hind angles to the thorax. The punctures on the head and thorax are coarse and umbilicate, the elytral interstices are thickly and roughly punctured throughout. The two males in the Sallé collection are much darker in colour; they have the head and thorax in great part piceous and the elytra brown.

### 20. **Ischiodontus approximatus.**

*Ischiodontus approximatus*, Cand. Monogr. Elat. ii. p. 113 [1].

*Hab.* MEXICO [1].

There is a single ( ♂ ) example of this species in the Janson collection, presumably the type. It resembles *I. tuspanus*, but it has the punctures on the head and thorax coarse, shallow, and umbilicate, the head flattened in front.

### 21. **Ischiodontus quadraticollis.**

*Ischiodontus quadraticollis*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. lix (Elat. Nouv. ii. p. 12) [1].

*Hab.* GUATEMALA [1] (*coll. Janson*), Zapote (*Champion*).

I am indebted to Dr. Candèze for the loan of his types ( ♂ ♀ ) of this species, and two others ( ♂ ) are also before me. The insect is extremely closely allied to *I. rufulus*, but is broader and more robust, and has the posterior coxal plates more sharply angulate towards the middle. In two of the specimens the coarse umbilicate punctuation of the thorax is very dense, and the smooth median line slightly raised.

### 22. **Ischiodontus badius.**

*Ischiodontus badius*, Cand. Monogr. Elat. ii. p. 114 [1].

*Hab.* MEXICO, Jalapa (*Höge*), Tepansacualco in Oaxaca (*Sallé*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Yzabal (*Sallé*); ? NICARAGUA [1].

The type of *I. badius*, a male, is contained in the Sallé collection; it is labelled "Yzabal." This specimen has the thorax sulcate along the middle, a character probably due to accidental circumstances and not possessed by the other examples I refer to the species. *I. badius* is closely allied to *I. rufulus*, from which it chiefly differs in the smoother elytral interstices and the shorter and less divergent hind angles of the

thorax. In some of the specimens the elytra are finely punctate-striate and the interstices flat on the disc, as in the type; but in others the elytra are coarsely punctate-striate throughout, with the interstices convex. The punctures on the head and thorax are very coarse, close, and umbilicate.

### 23. **Ischiodontus atrocæruleus.**

*Ischiodontus atrocæruleus*, Cand. Monogr. Elat. ii. p. 111[1].

*Dipropus angusticollis*, Sturm, in litt.

*Hab.* Mexico (*Sallé, ex Sturm*), Vera Cruz (*coll. Chevrolat*[1]).

The type of this species, a male, has been kindly communicated by M. Fleutiaux of Paris, and there is a specimen, also a male, in the Sallé collection. It may be known from its allies by the bluish-black elytra. The prosternal sutures are scarcely grooved in front.

### 24. **Ischiodontus cyanopterus.** (Tab. XIV. fig. 13, ♀.)

*Ischiodontus cyanopterus*, Cand. Monogr. Elat. ii. p. 112[1].

*Hab.* Mexico, Cordova in Vera Cruz (*Salle*[1]).

I have seen three specimens of this beautiful species, all females.

### 25. **Ischiodontus resplendens.** (Tab. XIV. fig. 14, ♀.)

Elongate, subcuneiform, convex, very shining; black, the elytra brilliant violaceous, this colour changing into metallic green at the base and sides and beyond the middle, and to golden at the apex; the abdomen entirely rufous; the legs blackish-brown; above and beneath somewhat thickly clothed with moderately long hairs, which are blackish on the upper surface. Head convex, sparsely, finely punctate, deeply excavate on either side in front, the frontal carina prominent, rounded anteriorly; antennæ moderately long, the joints from the third broadly widened and serrate, becoming narrower outwards, 3 and 4 subequal. Prothorax as long as broad, convex, the sides a little rounded and rapidly converging from the middle forwards; the hind angles strongly produced, curved inwards at the tip, not carinate above; the surface sparsely, finely punctate, canaliculate behind. Elytra elongate, gradually narrowing from the base, slightly depressed along the suture anteriorly; sparsely, finely punctate, without trace of striæ, except along the suture; the interspaces quite flat, even at the base. Beneath sparsely punctured; prosternal sutures feebly excavate in front; mesosternum declivous, the sides a little raised; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length $15\frac{1}{4}$, breadth $3\frac{2}{3}$ millim. (♀.)

*Hab.* Guatemala, San Gerónimo (*Champion*).

One specimen. Allied to *I. cyanopterus*, Cand., but larger and much more elongate, the hind angles of the thorax not carinate above, the abdomen rufous. It is more brilliantly coloured than any species of the group Dicrepidiini yet discovered.

### 26. **Ischiodontus virens.**

Moderately elongate, rather narrow, feebly convex, shining; pitchy-black, the elytra greenish-æneous, the antennæ black, the legs and under surface piceous, the coxæ, knees, and tarsi more or less ferruginous; above and beneath thickly clothed with very long yellowish-cinereous hairs. Head densely, moderately

finely punctate, broadly triangularly depressed in front, the frontal carina prominent, rounded anteriorly; antennæ nearly reaching the middle of the elytra, the joints from the third moderately widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, moderately convex, narrowing from the base, sinuate at the sides behind; the hind angles greatly produced, strongly divergent, acute, feebly carinate above; the basal margin without the usual impression on either side; the surface closely and somewhat coarsely punctate, canaliculate from the base to near the apex. Elytra moderately long, parallel to the middle, and narrowing thence to the apex; finely punctate-striate, the striæ (the first excepted) almost obsolete; the interstices flat, thickly punctured, the punctures finer than those of the striæ. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length $10\frac{1}{2}$, breadth $2\frac{3}{4}$ millim. (♂.)

*Hab.* MEXICO, Juquila in Oaxaca (*Sallé*).

One male example. Allied to *I. viridis*, but less convex, the head and thorax pitchy-black; the thorax canaliculate down the middle, sinuate at the sides behind, and with more divergent hind angles, the foveæ on the basal margin obsolete.

### 27. **Ischiodontus metallicus.** (Tab. XIV. figg. 15, ♂; 15 *a*, genitalia, ♂.)

Elongate, moderately convex, shining; pitchy-black, the elytra greenish-æneous, with the suture and epipleuræ obscure ferruginous, the antennæ pitchy-brown, the legs fusco-testaceous; above and beneath rather sparsely clothed with long blackish-brown hairs. Head sparsely, finely punctate, the front deeply triangularly excavate, the frontal carina very prominent, rounded anteriorly; antennæ half the length of the body, the joints from the third moderately dilated, 3 and 4 equal. Prothorax a little broader than long, trapezoidal, rapidly narrowing from the base forwards; the hind angles strongly produced, widely divergent, slightly incurved at the tip, sharply carinate above; the surface finely, sparsely punctate, transversely depressed in the middle before the base. Elytra elongate, subparallel to about the middle, and narrowing thence to the apex; somewhat coarsely striate-punctate, the punctures becoming as fine as those of the interstices towards the apex; the interstices sparsely, finely punctate, and (except on the basal declivity) flat. Beneath somewhat thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous, the sides a little raised; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length 12, breadth 3 millim. (♂.)

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

One male example. This insect resembles *I. chloropterus*; but may be easily known from the corresponding sex of that variable species by its sparsely and finely punctured head, the front of which is very deeply triangularly excavate, the more elongate antennæ, and the blackish pilosity. It approaches *Anoplischius chalcopterus*, which also has the front very deeply excavate in the male, but differs from that insect in the broadly and angularly widened coxal plates, and the stouter and much less elongate antennæ.

### 28. **Ischiodontus chloropterus.**

*Dicrepidius chloropterus*, Er. in Schomburgk's Reisen in Brit. Guiana, iii. p. 558 [1].

*Ischiodontus chloropterus*, Cand. Monogr. Elat. ii. p. 101, t. 2. figg. 5, 5 *a* [2]; Steinh. Col. Hefte, xiv. p. 120 [3].

*Ischiodontus smaragdinus*, Cand. loc. cit. p. 102 [4].

*Hab.* MEXICO[4], Tuxtla and Cordova (*Sallé*), Tapachula in Chiapas (*Höge*); GUATEMALA, Panzos and San Juan in Vera Paz, Zapote (*Champion*); NICARAGUA (*Sallé*), Chontales (*Belt*, *E. M. Janson*); PANAMA, Bugaba, Caldera, Volcan de Chiriqui (*Champion*), Taboga I. (*J. J. Walker*).—COLOMBIA [1 3]; VENEZUELA; GUIANA [1 2].

With Candèze's specimens before me I am unable to separate *I. smaragdinus* from *I. chloropterus*, the punctuation of the thorax being variable—very sparse and fine in some specimens, coarse and rather close in others. The males have the thorax more narrowed anteriorly, with the sides less rounded than in the females. The thorax also varies in colour from rufous to almost entirely piceous; in many specimens it is rufous, with a transverse piceous band across the middle, this colour sometimes extending so as to leave only the anterior margin and the hind angles rufous. A common insect in Central America. The males appear to be very much rarer than the females.

### 29. **Ischiodontus denticornis.** (Tab. XIV. figg. 16, ♂; 16 *a*, antenna.)

Moderately elongate, subcuneiform, convex, shining; the head and antennæ black, the prothorax, the elytral epipleuræ, and the under surface rufous or rufo-testaceous, the scutellum obscure ferruginous, the elytra metallic green, with the suture obscure ferruginous, the legs testaceous; above and beneath thickly clothed with long yellowish-cinereous hairs. Head sparsely, rather finely punctate, transversely depressed in front, deeply so in the male; the frontal carina prominent, rounded anteriorly in the female, slightly flexed downwards in the middle in the male; antennæ—(♂) about four-fifths the length of the body, the joints from the third very broadly widened, becoming narrower outwards, 3–8 each with their inner apical angle strongly and obliquely produced, 3 and 4 subequal—(♀) about half the length of the body, the joints from the third moderately widened. Prothorax broader than long, convex, narrowing from the base, the sides a little rounded anteriorly in the female; the hind angles strongly produced, scarcely divergent, carinate above; the surface sparsely, finely punctate, canaliculate behind. Elytra moderately elongate, narrowing from the base; rather finely punctate-striate, the striæ very shallow, the interstices flat, sparsely minutely punctate. Beneath somewhat thickly punctate; prosternal sutures very feebly grooved in front; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length $8\frac{2}{3}$–$9\frac{3}{4}$, breadth 2–$2\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Zapote (*Champion*).

*Var.*? The elytral pubescence fuscous, the legs fusco-testaceous, the hind angles of the prothorax divergent (♀.)

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

Three specimens—a pair of the typical form and a female of the variety. This species differs from all the allied forms in the strongly serrate and exceedingly elongate antennæ in the male. The frontal carina in this sex is less rounded than in the female, appearing subangular in the middle as viewed from above.

### 30. **Ischiodontus prasinopterus.** (Tab. XIV. figg. 17, ♂; 17 *a*, antenna.)

Moderately elongate, narrow, rather convex, shining; the head and antennæ black, the prothorax and under surface rufo-testaceous, the scutellum obscure ferruginous, the elytra (the epipleuræ included) golden-green, with the suture very narrowly obscure ferruginous, the legs testaceous; above and beneath thickly

clothed with long yellowish-cinereous hairs. Head somewhat convex, flattened in front, closely, rather coarsely punctate, the frontal carina prominent, rounded anteriorly; antennæ extending to the middle of the elytra, the joints from the third moderately widened, becoming narrower outwards, 3 as wide as, but slightly shorter than, 4. Prothorax broader than long, rather convex, narrowing from the base; the hind angles strongly produced, divergent, finely carinate above; the surface sparsely, rather coarsely punctate, canaliculate behind. Elytra moderately elongate, subparallel to the middle, and narrowing thence to the apex; somewhat coarsely punctate-striate, the striæ shallow; the interstices almost flat, thickly punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length 8–9, breadth 2–2¼ millim. (♂.)

*Hab.* Mexico, Juquila in Oaxaca (*Sallé*).

Two male examples. Allied to *I. denticornis*, but more parallel, the head more densely and more coarsely punctured, the antennæ very differently formed in the male, the prosternal sutures deeply grooved, &c.

### 31. **Ischiodontus æneipennis.**

Moderately elongate, convex, shining; the head ferruginous, or piceous with the front obscure ferruginous, the antennæ black, with the basal joint ferruginous, the prothorax, the elytral epipleuræ, and the under surface rufo-testaceous, the scutellum ferruginous, the elytra blackish- or greenish-æneous, with the suture obscure ferruginous, the legs testaceous, the apex of the tibiæ infuscate in one specimen; above and beneath somewhat thickly clothed with long yellowish-cinereous hairs. Head densely, rather finely punctate, flattened in front in both sexes, the frontal carina prominent, slightly truncate anteriorly; antennæ—(♂) extending nearly to the middle of the elytra, with the joints from the third elongate and moderately widened, becoming narrower outwards, 3 and 4 equal—(♀) very short, only about one-third the length of the body, joints 4–10 not much longer than broad. Prothorax moderately convex in the male, very convex in the female, transverse, narrowing from the base in the male, the sides subparallel behind and rounded anteriorly in the female; the hind angles moderately produced, carinate above; the surface closely, moderately finely punctate, with a narrow space down the middle impunctate, obsoletely canaliculate behind. Elytra moderately long, subparallel to the middle, and narrowing thence to the apex; rather coarsely punctate-striate, the interstices feebly convex and thickly punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length 7⅔–8¼, breadth 2–2¼ millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo in Guerrero (*H. H. Smith*).

One pair. The female differs considerably from the male, but I have no doubt that it belongs to the same species; it has the head piceous, the elytra more brightly coloured, the thorax very convex, and the antennæ very short—much shorter than in the females of all the allied forms. Allied to *I. prasinopterus*, but more convex, the thorax closely punctured, the elytra more obscurely coloured and more coarsely punctate-striate, the head not excavate in front in the male. From *I. denticornis* it may be known by the differently formed antennæ in both sexes.

### 32. **Ischiodontus marginatus.** (Tab XIV. figg. 18, ♂; 18 *a*, antenna.)

Elongate, subcuneiform, moderately convex, shining; the head black, the prothorax, scutellum, elytra, and under surface ferruginous or pitchy-red, the elytra with the sides from the base to the apex (except at the middle in one specimen) rather broadly infuscate, the dark portions with a translucent metallic green or

violaceous lustre, which sometimes extends to the whole of the disc; the antennæ black or blackish-brown, the legs pitchy-brown, the knees and the tips of the tarsi ferruginous; above and beneath rather sparsely clothed with long yellowish-cinereous hairs. Head closely, rather coarsely punctate, deeply triangularly excavate in front in the male, shallowly so in the female, the frontal carina very prominent, rounded anteriorly; antennæ—(♂) fully three-fourths the length of the body, the joints from the third broadly widened and rather sharply serrate, becoming narrower outwards, 3 and 4 equal—(♀) scarcely half the length of the body, the joints from the third moderately widened. Prothorax broader than long, convex, narrowing from the base in the male, the sides a little rounded anteriorly in the female; the hind angles moderately produced, slightly divergent, incurved at the tip, carinate above; the surface in the male sparsely and finely, in the female more coarsely and closely, punctate, obsoletely canaliculate down the middle, the channel deepening behind. Elytra very elongate, narrowing from the base, moderately finely punctate-striate, the striæ (the first excepted) almost obsolete, the interstices flat (except on the basal declivity) and sparsely punctured. Beneath somewhat thickly punctured; prosternal sutures not grooved in front; mesosternum declivous. Legs elongate; posterior coxal plates triangularly widened opposite the point of insertion of the femora.

Length $10\frac{1}{2}$–16, breadth $2\frac{1}{2}$–$4\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, Cerro Zunil, Volcan de Atitlan (*Champion*).

Six males and one female, all from the Pacific slope. The female, as usual, is much larger than the male; it also has the head and thorax more closely and more coarsely punctured. In the exceedingly elongate antennæ in the male and ungrooved prosternal sutures this species approaches *I. denticornis*; but it is much larger and more elongate, the elytra are differently coloured, the frontal carina is more prominent, and the antennæ in the male have their joints 3–8 less strongly produced at their inner apical angle.

### 33. **Ischiodontus viridis.** (Tab. XIV. fig. 19, ♂.)

Moderately elongate, rather convex, shining; the head, prothorax, scutellum, and underside æneous, the elytra metallic-green, the antennæ black, the legs pitchy-brown; above and beneath thickly clothed with long yellowish-cinereous hairs. Head densely, moderately finely punctate, triangularly depressed in front, the frontal carina prominent, rounded anteriorly; antennæ extending nearly to the middle of the elytra, the joints from the third rather broadly widened, becoming narrower outwards, 3 and 4 equal. Prothorax convex, broader than long, narrowing from the base; the hind angles strongly produced, divergent, finely and obsoletely carinate above; the surface thickly, moderately finely punctate, canaliculate behind. Elytra moderately long, subparallel to the middle and narrowing thence to the apex; finely punctate-striate, the punctures closely placed, the sutural stria deep; the interstices flat, somewhat thickly punctured, the punctures finer than those of the striæ. Beneath rather closely punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length $2\frac{3}{4}$, breadth $2\frac{1}{2}$ millim. (♂.)

*Hab.* Mexico, Cerro de Plumas (*Höge*).

One male specimen. This species may be known from all the allied forms by the brassy head and thorax and brilliant metallic-green elytra. It is less elongate and more thickly pilose than *I. chloropterus* and *I. metallicus*; the head and thorax are much more closely punctured, and the hind angles of the thorax are obsoletely carinate at the tip only. The antennæ are much more elongate than in the corresponding sex of *I. chloropterus*.

### 34. **Ischiodontus griseipilis.** (Tab. XIV. figg. 20, ♂; 20 *a*, antenna.)

Very elongate, narrow, subcuneiform, shining; pitchy-black, the hind angles of the prothorax and the elytra castaneous, the antennæ fusco-ferruginous, the legs pitchy-brown; above and beneath very sparsely clothed with long decumbent cinereous hairs, the legs also clothed with cinereous hairs. Head sparsely, rather finely punctate, the front triangularly depressed in both sexes, but more deeply so in the male, the frontal carina very prominent, rounded anteriorly; antennæ slender, extending to the middle of the elytra in the male, about half the length of the body in the female, joints 3 and 4 equal. Prothorax broader than long, narrowing from the base, the sides slightly rounded in the female; the hind angles moderately produced, slightly divergent, incurved at the tip, not carinate above; the surface finely and very sparsely punctate, with indications of a faintly impressed channel down the middle. Elytra very elongate, rapidly narrowing from the base in both sexes; finely striate-punctate, the punctures widely separated; the interstices flat, each with an irregular row of widely scattered minute punctures. Beneath sparsely punctured; prosternal sutures not excavate in front; mesosternum obliquely declivous, the sides raised, separated from the metasternum by a deep transverse suture; anterior process of the metasternum convex in front; posterior coxal plates angularly dilated opposite the point of insertion of the femora.

Length 13–15, breadth 3–3½ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui (*Champion*).

One male and two females. This species differs from the allied forms in having the prosternal sutures ungrooved in front, a character bringing it near *I. aterrimus*. In the very elongate slender antennæ and ungrooved prosternal sutures it approaches *Anoplischius chalcopterus*; the latter, however, has less dilated hind coxal plates. The body above and beneath and the legs are conspicuously clothed with long cinereous hairs.

### 35. **Ischiodontus erythroderus.** (Tab. XIV. figg. 21, ♂; 22, ♀, var.)

*Ischiodontus erythroderus,* Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. lviii (Elat. Nouv. ii. p. 12)[1].

Elongate, moderately convex, shining; black, the prothorax (the apical margin excepted) rufous or flavo-rufous, the under surface and antennæ black, the legs black or pitchy brown; above and beneath somewhat thickly clothed with long hairs, which are blackish on the head and elytra and fulvo-cinereous on the other parts of the body, the hairs along the suture and sides of the elytra sometimes fulvo-cinereous. Head closely, moderately finely punctate, triangularly depressed in front in both sexes, the frontal carina prominent, rounded anteriorly; antennæ extending to the middle of the elytra in the male, much shorter in the female, the joints from the third broadly widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, convex, narrowing from the base, the sides a little rounded anteriorly in the female; the hind angles strongly produced, divergent, incurved at the tip, carinate above; the surface somewhat thickly and finely punctate, deeply canaliculate behind. Elytra moderately elongate, rapidly narrowing from the base in the male, more parallel in the female; rather coarsely and deeply punctate-striate, the interstices feebly convex, flat on the disc towards the base, somewhat closely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; mesosternum separated from the metasternum by a deep transverse suture, obliquely declivous, raised behind; anterior process of the metasternum convex, horizontal; posterior coxal plates strongly, triangularly widened opposite the point of insertion of the femora.

*Var.* The prothorax with a large rounded patch on the middle of the disc, extending forwards to the apex, and the apical margin also, black.

Length 9½–15, breadth 2⅓–3¾ millim. (♂ ♀.)

*Hab.* Guatemala[1], Zapote, Capetillo, Dueñas, Calderas, San Gerónimo (*Champion*), Tepan (*Conradt*).

Twelve specimens of this species are before me—ten of the typical form and two of the variety. Dr. Candèze has examined one of the typical examples and named it as above; but, as I should not have suspected this from his brief diagnosis and remarks, a fresh description is given from our additional material. The variety he mentions probably belongs to *I. balteatus*. In the form of the mesosternum *I. erythroderus* approaches the genus *Spilus*.

### 36. **Ischiodontus melas.** (Tab. XIV. fig. 25, ♂.)

Elongate, narrow, convex, subcuneiform, deep black, shining, the oral organs and legs entirely testaceous, the antennæ black; somewhat thickly clothed with long hairs, which are blackish above (except at the base of the prothorax) and fulvo-cinereous beneath. Head rather convex, thickly and somewhat coarsely punctate, broadly triangularly excavate in front in the male, shallowly so in the female, the frontal carina very prominent, rounded anteriorly; antennæ extending fully to the middle of the elytra in the male, shorter in the female, the joints from the third broadly dilated and serrate, becoming narrower outwards, 3 and 4 equal. Prothorax convex, about as long as broad, narrowing from the base and somewhat compressed at the sides in the male, the sides a little rounded anteriorly in the female; the hind angles strongly produced, divergent, carinate above, slightly incurved at the tip; the surface finely, sparsely punctate, deeply canaliculate behind. Elytra very elongate, narrowing from the base in both sexes; moderately finely striate-punctate, the interstices sparsely and more finely punctured, and (except on the basal declivity) flat. Beneath somewhat thickly punctured; prosternal sutures very deeply excavate in front; mesosternum with the sides strongly raised and obliquely declivous, separated from the metasternum by a very deep transverse suture; posterior coxal plates strongly triangularly dilated opposite the point of insertion of the femora.

Length $10\frac{1}{4}$–$16\frac{1}{2}$, breadth $2\frac{1}{3}$–4 millim. (♂ ♀.)

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Twenty-two specimens, all females but two. Allied to *I. nigricornis*, but differing from that insect (and from *I. anceps* also) in having the upper and under surfaces deep black, the hairs on the upper surface almost black, the thorax longer and more attenuate, and the sides of the mesosternum more raised. The elytra are not distinctly striate, except along the suture.

In the form of the mesosternum, *I. melas* and the following species, *I. rufiventris*, form a transition to the genus *Spilus*. Both species are unknown to Dr. Candèze.

### 37. **Ischiodontus rufiventris.**

Elongate, narrow, convex, subcuneiform, shining; deep black, the oral organs and legs testaceous, the antennæ black; beneath, the prothorax excepted, ferruginous or rufo-testaceous; somewhat thickly clothed with long hairs, which are blackish above (except at the base of the prothorax) and fulvo-cinereous beneath. Head rather convex, thickly and somewhat coarsely punctate, the front broadly triangularly excavate in the male, shallowly so in the female, the frontal carina prominent, rounded anteriorly; antennæ extending to the middle of the elytra in the male, shorter in the female, the joints from the third broadly dilated and serrate, becoming narrower outwards, 3 and 4 equal. Prothorax convex, slightly broader than long, narrowing from the base, a little rounded at the sides anteriorly in the female; the hind angles strongly produced, divergent, slightly incurved at the tip, carinate above; the surface finely, sparsely punctate, deeply canaliculate behind. Elytra moderately elongate, narrowing from the base in both sexes; rather finely striate-punctate, the interstices sparsely and more finely punctured, and (except on

the basal declivity) flat. Beneath sparsely punctured; prosternal sutures deeply excavate in front: mesosternum with the sides strongly raised and obliquely declivous, separated from the metasternum by a deep transverse suture; posterior coxal plates angularly widened opposite the point of insertion of the femora.

Length $9\frac{1}{2}$–14, breadth $2\frac{1}{2}$–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Jalapa (*Höge*).

Twelve examples, four of which are males. Closely allied to *I. melas*, but less elongate, and with the under surface, the prothorax excepted, ferruginous. From *I. nigricornis* it differs in having the hairs on the upper surface blackish (instead of flavo-cinereous), the metasternum (as well as the abdomen) ferruginous, and the sides of the mesosternum more raised. The abdomen is more sparsely punctured than in either of these species. The specimens described appear to be perfectly mature.

### 38. **Ischiodontus aterrimus.**

Very elongate, rather broad, subcuneiform, moderately convex, shining; above and beneath deep black, the hind angles of the prothorax ferruginous within; the antennæ and legs pitchy-black, the knees and the upperside of the hind femora ferruginous; the upper and under surfaces sparsely clothed with rather long blackish hairs. Head thickly, somewhat coarsely punctate, longitudinally depressed in the middle between the eyes and also depressed on either side in front, the frontal carina prominent, rounded anteriorly; antennæ not half the length of the body, the joints from the third moderately widened, becoming narrower outwards, 3 and 4 equal. Prothorax broader than long, convex, narrowing from the base, a little rounded at the sides anteriorly; the hind angles strongly produced, divergent, carinate above; the surface finely, sparsely punctate, shallowly canaliculate behind. Elytra very elongate, narrowing from the base; very finely seriate-punctate, the punctures towards the apex and suture placed in fine almost obsolete striæ; the interstices flat, sparsely, minutely punctate. Beneath thickly and somewhat coarsely punctate; prosternal sutures shallowly grooved in front; mesosternum with the sides raised, subhorizontal, somewhat abruptly declivous in front; posterior coxal plates strongly triangularly widened opposite the point of insertion of the femora.

Length $19\frac{1}{2}$, breadth $4\frac{3}{4}$ millim. (♀.)

*Hab.* PANAMA, Chiriqui (*Trötsch*).

One female specimen. Larger and broader than the corresponding sex of *I. melas*, the pubescence above and beneath, and the legs, almost black, the thorax more transverse, the prosternal sutures obsoletely grooved in front, the sides of the mesosternum less raised behind, and more abruptly declivous in front. In the obsoletely grooved prosternal sutures this insect approaches the genus *Crepidius*, and in having the sides of the mesosternum raised and subhorizontal it resembles some of the species here referred to *Atractosomus*, in which it would be equally well placed. The antennæ are formed very much as in the females of *I. melas* and its allies.

### 39. **Ischiodontus ichthydius.**

*Ischiodontus ichthydius*, Cand. Monogr. Elat. ii. p. 129[1].

*Hab.* MEXICO[1], Cordova (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Yzabal (*Sallé*), San Juan, Panzos, and Panima in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Varies in size and colour. The males have the sides of the thorax much less rounded than in the females, the sides obliquely converging from the base in some specimens of this sex. The three examples from British Honduras are ferruginous in colour, and less elongate, but they apparently belong to the same species.

40. **Ischiodontus brevis.** (Tab. XIV. figg. 23, ♂; 23 *a*, antenna; 23 *b*, genitalia, ♂.)

Moderately elongate, rather broad, shining; pitchy-brown or brownish-ferruginous, the legs and antennæ ferruginous, the under surface fusco-ferruginous; above and beneath thickly clothed with long yellowish-cinereous hairs. Head convex, in some male specimens feebly triangularly depressed in the middle between the eyes, closely, rather coarsely punctate; the frontal carina prominent, rounded anteriorly; antennæ less than half the length of the body, slender, joint 3 small, slightly longer than 2. Prothorax convex, strongly transverse, the sides gradually converging from the base, rounded anteriorly; the hind angles moderately produced, parallel or feebly divergent, carinate above; the usual notches on the basal margin small or indistinct; the surface thickly, finely punctate, the punctures becoming much coarser at the sides anteriorly, and finer and more scattered towards the base, feebly canaliculate behind. Elytra about three times the length of the prothorax, in both sexes subparallel to the middle and narrowing thence to the apex, the apices slightly mucronate; finely punctate-striate, the interstices flat and somewhat thickly punctured. Beneath closely punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates broadly triangularly widened above the point of insertion of the femora.

Length 9–10, breadth $2\frac{1}{2}$–3 millim. (♂ ♀.)

*Hab.* Mexico, Tuxtla (*Sallé*), Teapa (*coll. Janson*); Guatemala, Panzos, Teleman, Chacoj, and San Juan in Vera Paz (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Numerous examples. Closely allied to *I. ichthydius*, Cand., and occurring in the same localities, but differing from that insect in its less elongate shape, the elytra in both sexes relatively shorter, subparallel to the middle, and slightly mucronate at the apex. The punctuation of the thorax and of the elytral interstices is not so dense as in *I. alopex*, *I. deletus*, and *I. punctatus*, Cand.

The insect is unknown to Dr. Candèze. A male from Bugaba is figured.

41. **Ischiodontus rufus.**

*Ischiodontus rufus*, Cand. Monogr. Elat. ii. p. 130[1].

*Hab.* Mexico[1], Teapa in Tabasco (*coll. Janson*).

There is a single male specimen of this species from Teapa in the Janson collection; it differs from the type (a female) in having the elytra rapidly narrowing from about the basal third.

In this insect the humeri of the elytra are rather deeply excavate for the reception of the hind angles of the thorax, and the fine carina on the latter is curved inwards anteriorly (instead of being parallel with the margin), characters separating *I. rufus*

from the allied forms. The posterior coxal plates are only feebly widened over the point of insertion of the femora, and the species would be equally well placed in *Anoplischius*.

### 42. **Ischiodontus alopex.**

*Elater alopex*, Fabr. Syst. Eleuth. ii. p. 236[1].
*Ischiodontus alopex*, Cand. Monogr. Elat. ii. p. 127[2].
*Atractodes lutescens*, Germ. Zeitschr. für Ent. i. p. 221[3].

*Hab.* ? MEXICO (*coll. Candèze*); NICARAGUA, Chontales (*Belt*).—SOUTH AMERICA, Colombia, Guiana, Brazil[1 2 3].

We have received three specimens of this variable and widely distributed species from Chontales.

### 43. **Ischiodontus debilis.** (Tab. XIV. figg. 24, ♂; 24 *a*, antenna.)

Moderately elongate, narrow, subfusiform, feebly convex, slightly shining; brownish-ferruginous, the antennæ and legs testaceous; above and beneath thickly clothed with rather long fulvo-cinereous hairs. Head convex, feebly depressed in the middle between the eyes, densely punctured; the frontal carina moderately prominent, rounded anteriorly, and slightly reflexed; antennæ slender, not half the length of the body, joint 3 small, very little longer than 2. Prothorax strongly transverse, slightly flattened on the disc, the sides converging from the base; the hind angles moderately produced, very finely carinate above, scarcely divergent, incurved at the tip; the usual basal impressions almost obsolete; the surface finely, closely punctate, obsoletely canaliculate behind. Elytra moderately long, narrowing from the base; finely punctate-striate, the striæ deeply impressed, the interstices feebly convex and thickly punctured. Beneath closely punctured; prosternal sutures deeply excavate in front; mesosternum declivous; posterior coxal plates broadly triangularly widened opposite the point of insertion of the femora.
Length $7\frac{1}{2}$, breadth 2 millim. (♂.)

*Hab.* PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

Two specimens. Allied to *I. alopex* (Fabr.), but differing from it in being smaller and narrower, and in having the hind angles of the thorax more finely carinate. *I. brevicollis*, Steinh., from Colombia, is an allied form, but it is described as having the hind angles of the thorax not carinated above.

### 44. **Ischiodontus limbatus.** (Tab. XIV. figg. 26, ♂; 26 *a*, antenna; 26 *b*, prosternal process.)

Moderately elongate, subfusiform, convex, shining; ferruginous or rufo-ferruginous, the elytra with a broad black marginal stripe extending from the shoulder to a little beyond the middle, the base infuscate, the legs and antennæ testaceous; above and beneath somewhat thickly clothed with moderately long fulvous hairs. Head short, convex, thickly, moderately finely punctate, the frontal carina well-defined, but not visible from above; antennæ rather short, slightly longer in the male than in the female, slender, joint 3 only a little longer than 2, narrower and much shorter than 4. Prothorax convex, much broader than long, the sides in both sexes rounded anteriorly and parallel behind; the hind angles moderately produced, incurved at the tip, not carinate above; the basal margin without the usual impressions; the surface sparsely and very finely punctate, obsoletely canaliculate behind. Elytra narrowing from the base in both sexes, moderately long; finely punctate-striate, the interstices feebly convex and sparsely punctured. Beneath somewhat thickly

punctate; prosternal sutures deeply excavate in front; mesosternum declivous, the sides feebly raised; posterior coxal plates broadly triangularly widened opposite the point of insertion of the femora.

Length 7–7½, breadth 2–2¼ millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

Many specimens. Allied to *I. ichthydius*, Cand., but very much smaller and less elongate, the sides of the elytra from the base to a little beyond the middle broadly bordered with black. The species is not known to Dr. Candèze.

### 45. **Ischiodontus bifasciatus.** (Tab. XIV. fig. 27.)

Moderately elongate, rather convex, shining; rufo-testaceous, the elytra with the base somewhat broadly, and a broad transverse fascia a little beyond the middle, black, the legs and antennæ testaceous; above and beneath somewhat thickly clothed with fulvous hairs. Head convex, not depressed in front, densely punctured; the frontal carina moderately prominent, reflexed, and strongly rounded anteriorly; eyes finely granulated; antennæ extending very little beyond the humeri, rather slender, joint 3 small, slightly longer than 2. Prothorax broader than long, the sides gradually converging from the base, a little rounded anteriorly; the hind angles strongly produced, sharp, scarcely divergent, finely carinate at the sides above; the usual notches on the basal margin small and shallow; the surface closely, very finely punctate, smoother on the basal declivity, deeply canaliculate behind. Elytra comparatively short, less than three times the length of the prothorax, narrowing from the base, rounded at the apex; finely punctate-striate, the interstices feebly convex at the sides, flat on the disc, and sparsely punctured. Beneath thickly punctured; prosternal sutures deeply excavate in front; prosternal process slightly declivous behind the coxæ, sharply angulate before the apex; mesosternum declivous and depressed; posterior coxal plates broadly triangularly widened towards the middle.

Length 7½, breadth 2¼ millim.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*).

One specimen. Allied to *I. fasciatus* and *I. cruciatus*, Cand., from Colombia, but differing from both these species in having the thorax not so strongly transverse, the suture of the elytra not infuscate between and beyond the fasciæ, the elytra themselves narrowing from the base, and the prosternal process sharply angulate before the apex.

## Group **EUDACTYLINI.**

## EUDACTYLUS.

*Eudactytus*, Sallé, Ann. Soc. Ent. Fr. 1854, p. 266; Candèze, Monogr. Elat. ii. p. 159.

A Tropical-American genus containing eighteen described species, two of which inhabit Mexico or Central America; one from Nicaragua and one from the State of Panama are now added. The large forms superficially resemble *Semiotus*.

Surface shining, sparsely pubescent; size large.

Head and prothorax rufo-testaceous, the latter with four black spots.

Elytra flavous, with the suture broadly, and a broad submarginal stripe, black . *boucardi.*

Elytra testaceous, with the suture and margins broadly from a little before the middle to the apex, black . . . . . *grandini.*

Head, prothorax, and elytra flavous, the prothorax with a broad median vitta, and the elytra with a little more than the apical half, black . . . . . *partitus.*

Surface subopaque, thickly pubescent; elytra each with five raised ivory-white spots; size small . . . . . *eburatus.*

### 1. **Eudactylus boucardi.**

*Eudactylus boucardi,* Sallé, Rev. et Mag. Zool. 1873, p. 16, t. 9. figg. 5, 5 *a* [1].

*Hab.* Mexico, Chinantla in Oaxaca (*Boucard* [1]).

### 2. **Eudactylus grandini.** (Tab. XV. fig. 1.)

*Eudactylus grandinii,* Candèze, Elat. Nouv. i. p. 23 (1864) [1].

*Hab.* Mexico [1]; Nicaragua, Chontales (*E. M. Janson*).

The type of this species is contained in the Janson collection, and a second example was found by the late E. M. Janson at Chontales. This insect is closely allied to *E. boucardi*, but differs from it in having the sutural and marginal stripes of the elytra obliterated before the middle, the interstices more sparsely punctured, and the apices acute.

The upper surface is sparsely clothed with short fine decumbent pubescence, this being rubbed off in the type. *E. castus*, Jans., from Ecuador, is another allied form.

### 3. **Eudactylus partitus.** (Tab. XV. fig. 5.)

Elongate, broad, shining; flavous, the eyes, a very broad median vitta on the prothorax, narrowing a little behind, the scutellum, the cavity surrounding it, and rather more than the apical half of the elytra, deep black; the antennæ black, with the tip of the apical joint ferruginous; the legs black, with the knees, the coxæ, and the tips of the tarsi more or less testaceous; the under surface black, the propleuræ in great part, and the ventral segments at the sides, flavous; the surface sparsely clothed with short fine pubescence, which partakes of the ground-colour. Head thickly, moderately finely punctate, triangularly flattened in front, the frontal carina prominent, rounded anteriorly; antennæ stout, short, joint 3 a little longer than 2, 4 about three times the length of 3. Prothorax longer than broad, longitudinally convex, a little rounded at the sides in front; the hind angles greatly produced, strongly divergent, carinate above; the surface thickly, moderately finely punctate, and with a strongly raised, smooth, stout, oblong elevation at the middle of the basal declivity, preceded by a faint median groove. Scutellum rather coarsely punctured. Elytra broad, about two and one-half times the length of the prothorax, explanate at the sides a little below the base, and rapidly narrowing thence to the apex, the base obliquely cut off on either side, the apices sharp and dehiscent; finely punctate-striate, the striæ very deeply impressed beyond the middle; the interstices strongly convex, becoming flatter on the disc towards the base, thickly, very finely punctate. Beneath closely and very finely, the prosternum and propleuræ sparsely and more coarsely, punctate.

Length $17\frac{1}{2}$, breadth $5\frac{1}{2}$ millim.

*Hab.* Nicaragua (*E. M. Janson*).

One specimen in the Janson collection, probably a female. Allied to *E. dimidiatus*, Cand., from Choco, Colombia; but much larger, the front not black, the thorax longer and more parallel, the elytra with more than the apical half black, the interstices not rugosely punctured.

### 4. **Eudactylus eburatus.** (Tab. XV. fig. 3.)

Moderately elongate, narrow, subopaque, the elytra slightly shining; the head piceous or reddish-brown, pale testaceous in front; the prothorax piceous or pitchy-black, with the hind angles entirely testaceous; the scutellum testaceous; the elytra piceous or black, with the base on either side of the scutellum, and a large oblique patch extending inwards from a little below the humeri to the third stria, testaceous, each elytron with five raised ivory-white spots—three, small, placed longitudinally on the disc (one at the base one a little below it, and one slightly before the middle), one, larger, near the margin, a little beyond the middle, and one, oblong, on the outer part of the disc near the apex,—the anterior third of the epipleuræ also ivory-white; the antennæ pitchy-black, with the four or five basal joints pale testaceous; the legs entirely whitish; the under surface varying in colour from testaceous to brownish-piceous; the head, prothorax, and the body beneath clothed with short, fine, decumbent, cinereous pubescence, the prothorax with five fuscous marks (a broad, elongate patch on either side of the disc behind, a small spot in front of it, and a large spot on the anterior part of the disc in the middle); the elytra with the suture rather broadly, the sides and apex, and also the light-coloured parts, clothed with pallid pubescence, the rest of their surface fusco-pubescent. Head densely, finely punctate, sulcate in the middle between the eyes and transversely depressed in front; the frontal carina moderately prominent, flexed downwards in the middle, rounded anteriorly; antennæ extending very little beyond the humeri, slightly shorter in the female; joints 2 and 3 short, equal, 4–11 dilated and serrate, becoming wider outwards, 4 as long as 2 and 3 united, much longer than 5, 7–10 about as broad as long. Prothorax much longer than broad, convex, the sides feebly rounded and slightly converging anteriorly and sinuate behind; the hind angles strongly produced, divergent, acute, very finely and obsoletely carinate externally; the surface densely, finely punctate, shallowly canaliculate down the middle, the channel replaced at the base by a short fine carina. Elytra moderately elongate, gradually narrowing from about the basal third, the apices finely mucronate and slightly dehiscent; deeply and rather coarsely punctate-striate, the striæ interrupted by the raised ivory-white spots, the latter being very finely punctured; the interstices convex, closely and very finely punctate. Beneath thickly, very finely punctate, the punctures on the prosternum and propleuræ coarser than on the other parts. Posterior coxal plates narrow, very gradually widening inwards.

Length $7\frac{1}{3}$–$7\frac{2}{3}$, breadth 2 millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Four specimens. Allied to *E. alboguttatus*, Cand., from Cayenne, but narrower and more elongate, and very differently coloured. The elytra have five raised ivory-white spots on each elytron, a character not possessed by any other Elaterid known to me. These specimens were found singly, at long intervals, on the borders of the forest, sunning themselves upon leaves.

## ACHRESTUS.

*Anepsius*, Candèze, Monogr. Elat. ii. p. 156 (1859) (nec Leconte).
*Achrestus*, Candèze, Col. Hefte, v. p. 122 (1869).

This genus contains five described species, all from Tropical South America, and others, unnamed as yet, exist in collections. The two from Nicaragua now added differ from those described by Candèze in having the antennæ strongly flabellate in the male sex.

Black, the prothorax with a broad submarginal vitta of fulvous hairs, extending to the head and to the base of the elytra; prothorax as long as broad, opaque, not foveate at the sides . . . . . *fulvovittatus*.

Fulvous, the head in great part, the prothorax with two vittæ on the disc, the elytra with an interrupted ante-median fascia, the apical two-fifths, and the suture anteriorly, black; prothorax transverse, shining, foveate at the sides . *venustus*.

### 1. **Achrestus fulvovittatus.** (Tab. XV. fig. 2, ♂.)

Elongate, parallel, moderately broad, opaque; deep black, the hind angles of the prothorax, and an elongate patch on the outer part of the disc of the elytra at the base, extending to the humeri and inwards to opposite the scutellum, rufous; the antennæ, legs, and under surface black, the knees and tarsal claws rufous; above densely clothed with rather long, coarse hairs, which are erect on the head and on the base of the elytra and decumbent on the rest of the upper surface, the hairs fulvous along a broad stripe on either side of the disc of the prothorax, extending from the hind angles to the apex, and continued on to the head, and on the rufous patch at the base of the elytra, those on the other parts brownish-black; the under surface shining, sparsely cinereo-pubescent. Head very densely, finely punctate, the punctures becoming much coarser towards the apex, deeply triangularly depressed in front; the frontal carina very prominent, rounded anteriorly; antennæ densely punctured and pubescent, about one-half the length of the body, strongly flabellate from the third joint, the rami broadly flattened and rapidly increasing in length outwards. Prothorax as long as broad, convex, the sides rounded from the middle forwards and sinuate behind; the hind angles strongly produced, divergent, blunt and slightly incurved at the tip, carinate above; the surface very densely and finely punctate throughout, deeply longitudinally sulcate in the middle behind. Elytra about two and two-thirds the length of the prothorax, parallel to beyond the middle, flattened on the disc, somewhat abruptly declivous at the base, bluntly rounded at the apex; coarsely and deeply punctate-striate, the interstices convex, densely, finely punctate. Beneath somewhat thickly, moderately finely punctate, the prosternum and propleuræ very sparsely punctured.

Length 11, breadth 3 millim. (♂.)

*Hab.* NICARAGUA, Chontales (*E. M. Janson*).

One male example. Allied to *A. lycidioides*, Cand., from Cayenne, but differing from that species in its much longer thorax, and in the strongly flabellate antennæ in the male.

### 2. **Achrestus venustus.** (Tab. XV. fig. 4, ♂.)

Elongate, parallel, rather narrow, shining; the head black, fulvous in the middle in front; the prothorax fulvous, with two broad, narrowly separated, black vittæ on the disc, which are dilated on the outer side before the middle and narrowed behind; the scutellum piceous; the elytra fulvous, with the apical two-fifths, and the suture rather broadly to a little beyond the basal third, violaceous-black, and a broad, oblong, subquadrate patch on the outer part of the disc before the middle piceous; the antennæ and legs black, the latter with the trochanters and tarsal claws rufo-testaceous; the under surface in great part black, the prosternum and the propleuræ, a broad space along the middle of the latter excepted, flavo-testaceous; above thickly clothed with long, coarse, semi-erect hairs, which partake of the ground-colour, beneath sparsely clothed with yellowish-cinereous hairs. Head sparsely, coarsely, irregularly punctate, deeply transversely depressed in front; the frontal carina very prominent, subtruncate anteriorly; antennæ more than half the length of the body, strongly flabellate from the third joint, the rami broadly flattened and gradually increasing in length. Prothorax transverse; the sides slightly flexuous, rounded in front; the hind angles strongly produced, moderately divergent, blunt and slightly incurved at the tip, finely carinate above; the surface sparsely, irregularly punctate, a broad space along the centre almost smooth, deeply foveate at the sides before the middle, and with a median channel, which becomes very deep and broad behind. Elytra about three and one-half times the length of the prothorax, parallel for three-fourths of their length, broadly rounded at the apex, a little flattened on the disc; coarsely and very deeply punctate-striate; the interstices narrow, strongly convex, thickly, minutely punctate. Beneath sparsely, finely punctate, the propleuræ with a few widely scattered punctures only.

Length 11, breadth $2\frac{3}{4}$ millim. (♂.)

*Hab.* NICARAGUA, Chontales (*Belt*).

One male specimen. Allied to *A. phyllocerus*, Cand., from Venezuela, but narrower, the head and thorax much more sparsely punctured and more shining, the elytral interstices narrower and more convex, the antennæ flabellate in the male. The markings on the anterior half of the elytra form an interrupted ante-median fascia. A more nearly allied undescribed form from the Amazons is contained in the Janson collection.

## Group **MONOCREPIDIINI.**

### MONOCREPIDIUS.

*Monocrepidius*, Eschscholtz, in Thon's Archiv, ii. 1, p. 31 (1829); Candèze, Monogr. Elat. ii. p. 187.

*Conoderus*, Eschscholtz, loc. cit

A genus containing upwards of 200 described species, more than half of which are American. In the typical forms, *M. lividus*, *M. apiatus*, &c., the fourth tarsal joint is broadly lamellate beneath; but in some of the species the lamella is shorter and narrower, and in the small forms placed at the end of the genus (*M. pictus*, *M. bellus*, &c.) it is reduced to a narrow filament not wider than the apical joint. These small species have entirely the facies of *Drasterius*, of the group Elaterini, from which they differ only in the lamellate fourth tarsal joint. The outer prosternal suture is well defined in *M. pictus* and *M. bellus*, indistinct in our other species. The genitalia of the males afford good differential characters in some of the closely allied forms. In two species, *M. apiatus* and *M. pilatei*, the terminal dorsal segment is deeply sulcate down the middle.

Thirty-two species are here enumerated from within our limits, twelve of which are described as new.

A. Fourth tarsal joint strongly lamellate beneath, the lamella visible from above.
  *a*. Elytra abruptly emarginate at the apex, the sutural and outer angles dentiform; antennæ with joints 2 and 3 equal in length . . . . . Species 1, 2.
  *b*. Elytra more feebly emarginate at the apex; antennæ with joint 3 nearly twice as long as 2.
    *a'*. Apex of the fifth ventral segment rounded; outer apical angle of the elytra obtuse . . . . . Species 3.
    *b'*. Apex of the fifth ventral segment more or less mucronate at the middle; outer apical angle of the elytra distinct.
      *a''*. Punctuation of the prothorax moderately close, the punctures unequal in size . . . . . Species 4.
      *b''*. Punctuation of the prothorax dense, the punctures very fine and equal in size . . . . . Species 5.

*c*. Elytra obsoletely emarginate or rounded at the apex:
*c'*. Antennæ with joint 3 nearly twice as long as 2.
*c''*. Hind angles of the prothorax carinate above.
*a'''*. Punctures of the prothorax unequal in size.
*a*⁴. Elytra rather coarsely punctate-striate . . . . . Species 6.
*b*⁴. Elytra finely punctate-striate . . . . . Species 7–11.
*b'''*. Punctures of the prothorax equal in size . . . . . Species 12.
*d''*. Hind angles of the prothorax not carinate above; prothorax narrow and subcylindrical . . . . . Species 13.
*d'*. Antennæ with joint 3 not or very little longer than 2.
*e''*. Hind angles of the prothorax carinate above and with a sharp carina extending along the basal margin inwards . . . . . Species 14–20.
*f''*. Hind angles of the prothorax not distinctly carinate along the basal margin.
*e'''*. Supra-lateral carina almost parallel with the margin.
*c*⁴. Punctures of the prothorax subequal in size.
*a*⁵. Punctures rather coarse . . . . . Species 21.
*b*⁵. Punctures very fine . . . . . Species 22.
*d*⁴. Punctures of the prothorax distinctly unequal in size . . . . Species 23.
*d'''*. Supra-lateral carina not parallel with the margin anteriorly.
*e*⁴. Punctures of the prothorax very fine and equal in size, or with slightly coarser ones intermixed . . . . . Species 24–26.
*f*⁴. Punctures of the prothorax distinctly unequal in size . . . . Species 27.

B. Fourth tarsal joint with a long and very slender lamella beneath, the lamella not visible from above; antennæ with joints 2 and 3 short, subequal; size small, 3–6 millim.
*d*. The outer prosternal suture well defined.
*e'*. Prothorax tuberculate in the middle before the base . . . . . Species 28.
*f'*. Prothorax not tuberculate in the middle before the base . . . . . Species 29.
*e*. The outer prosternal suture indistinct.
*g'*. Punctures of the prothorax unequal in size . . . . . Species 30.
*h'*. Punctures of the prothorax subequal in size . . . . . Species 31, 32.

### 1. **Monocrepidius rodriguezi.** (Tab. XV. figg. 6, ♂; 6 *a*, antenna.)

*Monocrepidius rodriguezi*, Cand. Elat. Nouv. iii. p. 47 [1].

*Hab.* Mexico, Cordova, Tuxtla (*Sallé*), Jalapa, Oaxaca (*Höge*); British Honduras (*Blancaneaux*); Guatemala [1]; Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

*Var.* The elytra with a broad marginal stripe, interrupted beyond the middle, obscure testaceous.

*Monocrepidius decimus*, var., Cand. Monogr. Elat. ii. p. 206 [2].

*Hab.* Mexico (*Klingelhöffer* [2]), Playa Vicente, Tuxtla, Tepansacualco (*Sallé*), Jalapa, Cerro de Plumas, Tapachula (*Höge*); British Honduras, R. Hondo (*Blancaneaux*);

Guatemala (*coll. Janson*); Nicaragua, Chontales (*E. M. Janson*); Panama, Volcan de Chiriqui (*Champion*).

This is a common insect in Central America. *M. rodriguezi* is closely allied to *M decimus*, but has longer and more attenuate elytra. In both species (the types of which I have examined) the elytra are emarginate at the apex, with the outer apical angle acutely produced. The antennæ are a good deal longer in the male than in the female, the insect in this respect approaching *M. longicornis*, Cand., from Colombia *. A male from Chiriqui is figured.

### 2. **Monocrepidius sinaloæ.**

*Monocrepidius sinaloæ*, Cand. Ann. Soc. Ent. Belg. 1889, p. 91 (Elat. Nouv. iv. p. 25) [1].

*Hab.* Mexico, Presidio de Mazatlan (*Forrer*), Sinaloa [1].

Two specimens, agreeing with one communicated by Dr. Candèze. *M. sinaloæ* closely resembles the pallid form of *M. decimus*, Cand., but differs from it in its more parallel shape.

### 3. **Monocrepidius depressipennis.**

*Monocrepidius depressipennis*, Cand. Monogr. Elat. ii. p. 252 [1].

*Hab.* Mexico [1] (*Sallé*).

A single abraded specimen of this species is contained in the Sallé collection; it has the apex of the elytra conjointly emarginate, with the sutural angle acute and the outer angle rounded.

### 4. **Monocrepidius flavangulus.** (Tab. XV. figg. 7, var. *vittatus*, ♂; 7 *a*, genitalia, ♂.)

*Monocrepidius flavangulus*, Cand. Monogr. Elat. p. 250 [1].

*Hab.* Mexico [1], Cordova, Tuxtla, Oaxaca (*Sallé*), Playa Vicente, Jalapa (*Höge*), Orizaba (*coll. Janson*), Atoyac in Vera Cruz (*H. H. Smith*); British Honduras, R. Hondo (*Blancaneaux*); Nicaragua, Chontales (*Belt*).

*Var.* The elytra with a broad submarginal vitta ferrugineo-testaceous.

*Monocrepidius vittatus*, Cand. loc. cit. p. 251 [2].

*Hab.* Mexico [2], Puebla, Cordova, Toxpam (*Sallé*), Playa Vicente, Jalapa, Oaxaca (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*), San Francisco in Vera Cruz (*Wickham*); Guatemala, San Gerónimo (*Champion*).

We have received many specimens of both forms of this species; the typical form

* *M. angulatus*, Steinh., from Colombia, the type of which is before me, is a female of *M. longicornis*.

occurs in company with the variety at numerous localities. *M. flavangulus* may be known from all its allies by having the fifth ventral segment mucronate in the middle at the apex; the mucro is variable in length, it being short in some specimens of the var. *vittatus*. The elytra are obliquely truncate at the apex, with the sutural and outer angles obsoletely mucronate. We figure a male of the var. *vittatus*, from Jalapa.

### 5. **Monocrepidius pruinosus.**

Elongate, convex, rather narrow, pitchy-black, the hind angles of the prothorax obscure testaceous, thickly clothed with very short, fine, greyish pubescence, the antennæ and palpi rufo-testaceous, the legs flavo-testaceous. Head thickly, finely punctate, foveate on either side before the eyes, slightly declivous in front, the frontal carina broadly truncate; antennæ nearly half the length of the body, joint 3 about twice as long as 2, the two together slightly longer than 4. Prothorax considerably longer than broad, wider at the middle than at the base; the sides moderately rounded, sinuate behind, and converging at the apex; the hind angles strongly produced, slightly divergent, carinate at the sides above, and with a very short, faint, oblique carina at the tip; the surface densely, finely, uniformly punctate, and obsoletely canaliculate down the middle. Elytra a little more than twice the length of the prothorax, and equalling it in width, parallel to the middle and rapidly narrowing thence to the apex, the apices feebly, obliquely emarginate; deeply and rather coarsely punctate-striate, the interstices convex and finely rugulose. Fifth ventral segment obsoletely mucronate in the middle at the apex. Fourth tarsal joint rather broadly lamellate beneath.

Length $10\frac{1}{2}$, breadth $2\frac{2}{3}$ millim.

*Hab.* MEXICO, Rio Papagaio in Guerrero (*H. H. Smith*).

One specimen, apparently a female. Allied to *M. flavangulus*; but much smaller and narrower, the elytra less elongate and more deeply punctate-striate, the thorax more rounded at the sides, the fifth ventral segment obsoletely mucronate. The pubescence is very short.

### 6. **Monocrepidius lividus.** (Tab. XV. fig. 8, genitalia, ♂.)

*Elater lividus*, De Geer, Mém. des Ins. iv. p. 162, t. 18. fig. 4 (1774)[1].
*Monocrepidius lividus*, Lec. Trans. Am. Phil. Soc. x. p. 482[2]; Cand. Monogr. Elat. ii. p. 244[3]; Fleut. & Sallé, Ann. Soc. Ent. Fr. 1889, p. 411[4].
*Elater castanipes*, Herbst, Käfer, x. p. 23, t. 160. fig. 5[5].
*Elater elongatus*, Palis. de Beauv. Ins. Afr. et Amér. p. 78, t. 8. fig. 4[6].
*Monocrepidius elongatus*, Chevr. Ann. Soc. Ent. Fr. 1852, p. 630[7].
*Elater lobatus*, Say, Journ. Acad. Phil. iii. p. 175[8]; Trans. Am. Phil. Soc. vi. p. 174[9]; Complete Writings, ii. pp. 114, 610[10].
*Monocrepidius lobatus*, Germ. Zeitschr. für Ent. i. p. 228[11].
? *Elater flavipes*, Oliv. Ent. ii. no. 31, p. 30, t. 2. fig. 17[12].

*Hab.* NORTH AMERICA[5 11 12], Pennsylvania[1 8], Middle and Southern States[2 3], Western States[8].—MEXICO[3], Etla, Cordova, Oaxaca (*Sallé*), Jalapa (*Höge, M. Trujillo*), Orizaba (*coll. Janson*).—ANTILLES[3], San Domingo[6], Guadeloupe[4].

Sent in abundance by Herr Höge from Jalapa. The antennæ are a little more elongate in the males than in the females.

### 7. **Monocrepidius rubidus.** (Tab. XV. figg. 9, ♂; 9 *a*, genitalia, ♂.)

Elongate, shining, ferruginous, or reddish-brown, the legs testaceous; thickly clothed with yellowish-cinereous hairs. Head thickly, finely punctate, feebly sulcate between the eyes, declivous in front, the frontal carina broadly truncate and moderately prominent; antennæ nearly half the length of the body in the male, only reaching the base of the elytra in the female, joint 3 nearly twice as long as 2, the two together slightly longer than 4. Prothorax longer than broad, gradually narrowing from the base, with the sides feebly sinuate behind and slightly rounded in front in the male, broader and with the sides strongly rounded in the female; the hind angles greatly produced, strongly divergent, carinate above at the sides, and with a short, oblique carina at the apex; the surface rather sparsely, finely punctate, with scattered intermixed slightly coarser punctures, obsoletely canaliculate down the middle, the channel becoming deep behind. Elytra elongate, wider than the prothorax in the male, flattened on the disc, parallel to the middle and rapidly narrowing thence to the apex, the apices conjointly rounded; deeply and moderately finely punctate-striate; the interstices almost flat, very sparsely punctate. Beneath closely and finely punctate, with scattered intermixed coarser punctures, the prosternum more coarsely and much more sparsely punctured. Posterior coxal plates very broadly widened to near the middle, abruptly and obliquely narrowing outwards. Fourth tarsal joint rather broadly lamellate beneath.

Length 11–14, breadth 3–4 millim. (♂ ♀.)

*Hab.* Mexico, Ventanas in Durango (*Höge*).

Numerous examples of both sexes. Closely allied to *M. parallelus*, Cand., but differing from it in its ferruginous colour and less parallel shape; the thorax with the fine interstitial punctuation more diffuse, the other punctures not so coarse; the elytra flattened on the disc, narrowing from about the middle. From *M. lividus*, De Geer, it may be known by the more finely punctate-striate elytra, and the very differently formed genitalia of the male. The short carina within the apex of the hind angles of the thorax is sometimes indistinct.

### 8. **Monocrepidius tarsalis.**

*Monocrepidius tarsalis*, Cand. Monogr. Elat. ii. p. 250[1].

*Hab.* Mexico[1] (*coll. Janson*), Omilteme in Guerrero (*H. H. Smith*), Jalapa (*Höge*), Las Peras and Juquila (*Sallé*).

I have seen twelve specimens of this species; some of them are reddish-brown or castaneous, and three have the elytra castaneous, with the suture broadly infuscate. The males have the antennæ a little longer than the females. In the very broadly lamellate fourth tarsal joint the insect resembles *M. lividus*.

### 9. **Monocrepidius parallelus.** (Tab XV. figg. 10, ♂; 10 *a*, genitalia, ♂.)

*Monocrepidius parallelus*, Cand. Monogr. Elat. ii. p. 246[1].
*Monocrepidius canus*, Sturm, in litt.

*Hab.* Mexico[1] (*Sallé, ex coll. Sturm*), Santa Clara in Chihuahua, Chilpancingo in Guerrero, Tacambaro in Michoacan (*Höge*), Puebla, Guanajuato, Cosamaloapam (*Sallé*), Cuernavaca in Morelos (*H. H. Smith*).

Sent in plenty by Mr. H. H. Smith from Cuernavaca. The males have longer

antennæ and a narrower and more parallel thorax than the females. In some specimens the finer interstitial punctuation of the thorax is a little coarser and closer than in others. A specimen ( ♂ ) of a *Monocrepidius* sent me by Mr. Wickham, from Arizona, probably belongs to this species. We figure a male of *M. parallelus* from Guanajuato.

### 10. **Monocrepidius annulicornis.**

Elongate, rather narrow, moderately convex; pitchy-brown, the hind angles of the prothorax testaceous, the elytra pitchy-black; the antennæ piceous, with the apical three joints and the apex of each of the others testaceous, the oral organ flavous, the legs testaceous; above and beneath thickly clothed with short, fine, cinereous hairs. Head thickly, finely punctate, declivous in front, the frontal carina broadly truncate; antennæ slender, not half the length of the body, joint 3 nearly twice as long as 2, the two together longer than 4. Prothorax considerably longer than broad, a little narrowed in front, the sides slightly rounded from the middle forwards and feebly sinuate behind; the hind angles strongly produced, slightly divergent, sharply carinate at the sides above and with a sharp oblique carina extending from the apex inwards; the surface closely, finely punctate, with indications of a short median groove before the base. Elytra about two and one-fourth times the length of the prothorax, subparallel in their basal half, and rapidly narrowing thence to the apex, the apices conjointly rounded; deeply punctate-striate, the interstices feebly convex throughout and somewhat thickly punctured. Beneath densely, finely, uniformly punctate. Fourth tarsal joint strongly lamellate beneath. Fifth ventral segment with a very short smooth line in the middle at the apex.

Length $10\frac{1}{4}$, breadth $2\frac{2}{3}$ millim.

*Hab.* MEXICO, Cuernavaca (*Sallé*).

One specimen, probably a male. Closely allied to *M. pruinosus*, but differing from it in the sharply bicarinate hind angles of the thorax, the partly infuscate antennæ, the longer pubescence, and the more coarsely punctured elytral striæ. Smaller and less elongate than *M. flavangulus*, the elytra rounded at the apex, the fifth ventral segment without distinct mucro.

### 11. **Monocrepidius albinus.**

*Monocrepidius albinus*, Cand. Monogr. Elat. ii. p. 246[1].

*Hab.* MEXICO (*coll. Janson, ex Laferté*), Vera Cruz (*Sallé*[1]).

There are two specimens of this species in the Sallé collection, and I have found a single example ( ♂ ) of it mixed with the series of *M. lividus* in the Janson collection. The antennæ are short in both sexes.

### 12. **Monocrepidius athoides.**

♂. *Monocrepidius athoides*, Lec. New Sp. Col. p. 84 (1863)[1].

♀. *Monocrepidius mutuus*, Horn, Trans. Am. Ent. Soc. iii. p. 312 (1871)[2].

*Hab.* NORTH AMERICA, Texas[1], Arizona[2].—MEXICO (*coll. Janson, ex Candèze*), Puente de Ixtla in Morelos, Mescala in Guerrero (*H. H. Smith*), Ventanas in Durango, Iguala in Guerrero, Cuernavaca, Jalapa (*Höge*), Vera Cruz (*Sallé*), San Francisco in Vera Cruz (*Wickham*), Yucatan (*coll. Janson*), Temax in North Yucatan (*Gaumer*).

The numerous examples from the above Mexican localities agree well with a specimen of *M. athoides* from Arizona, communicated by Dr. Horn; they vary greatly in size—from 10–14 millim. in length, and from $2\frac{1}{2}$–4 millim. in width. They have the antennæ rather short in both sexes; the thorax convex, closely, uniformly punctate, and with the hind angles bicarinate; the elytra rather deeply punctate-striate, the interstices somewhat convex, and thickly, subrugosely punctate; the fourth tarsal joint narrowly lamellate beneath. The two specimens in the Janson collection from that of Candèze are labelled *M. parallelus*.

### 13. **Monocrepidius angusticollis.** (Tab. XV. fig. 11, ♂.)

Very elongate, depressed, slightly shining; brown or reddish-brown, paler beneath, the hind angles of the prothorax and the antennæ ferrugineo-testaceous, the legs testaceous; clothed with fine yellowish-cinereous hairs. Head thickly, finely punctate, declivous in front; the frontal carina broadly subtruncate and moderately prominent; antennæ slender, about reaching the basal fourth of the elytra, joint 3 nearly twice as long as 2, the two together slightly longer than 4. Prothorax narrow, subparallel, about one-fourth longer than wide, feebly longitudinally convex; the hind angles acute, narrow, greatly produced, abruptly divergent, slightly upturned, not carinate; the surface thickly, finely punctate, and with a smooth raised median line towards the base. Elytra nearly four times the length of, and one-half wider than, the prothorax, depressed, the sides subparallel to the middle, and very gradually converging thence to the apex, the apices conjointly rounded; finely and rather sharply punctate-striate, the interstices flat, feebly transversely rugulose. Beneath closely and finely, the prosternum more coarsely and sparsely, punctate. Posterior coxal plates very broadly dilated to near the middle, abruptly and obliquely narrowing outwards. Fourth tarsal joint with a short lamella beneath.
Length 11–$11\frac{1}{4}$, breadth 3 millim. (♂.)

*Hab.* Mexico, Ciudad in Durango 8100 feet (*Forrer*).

Two male examples. This species is perhaps nearest allied to *M. parallelus*; it differs from all the allied forms in its very narrow, subparallel thorax, the hind angles of which are long, slender, abruptly divaricate, and without distinct carina; the elytra are depressed, very little narrower at the apex than at the base; the penultimate joint of the tarsi is feebly lamellate beneath.

### 14. **Monocrepidius apiatus.**

*Monocrepidius apiatus*, Er. Archiv für Naturg. xiii. 1, p. 78[1]; Cand. Monogr. Elat. ii. p. 223, t. 4. fig. 3[2].

*Hab.* Panama, Bugaba in Chiriqui (*Champion*).—South America[2] to Peru [1 2].

Six specimens. This species agrees with *M. pilatei* in having the terminal dorsal segment (the apex only of which is usually visible) sharply, longitudinally sulcate down the middle in both sexes. In the closely allied *M. nocturnus* and *M. notatus* there is no trace of this groove.

### 15. **Monocrepidius pilatei.**

*Monocrepidius pilati*, Cand. Monogr. Elat. ii. p. 224, t. 4. figg. 4, 4 *a–e* [1].

*Hab.* MEXICO, Guanajuato (*Sallé*), Orizaba (*coll. Janson*), Yucatan [1] (*Pilate*, *Sallé*); GUATEMALA, San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*E. M. Janson*).

### 16. **Monocrepidius nocturnus.** (Tab. XV. fig. 12, ♂.)

*Monocrepidius nocturnus*, Cand. Monogr. Elat. ii. p. 222 [1].

*Hab.* MEXICO, Cordova (*Sallé* [1]); GUATEMALA, Chiacam and Senahu in Vera Paz (*Champion*), Capetillo (*Rodriguez*).

A male from Chiacam is figured.

### 17. **Monocrepidius probus.**

*Monocrepidius probus*, Cand. Elat. Nouv. iii. p. 50 [1].

*Hab.* GUATEMALA[1], Capetillo (*Champion*).

Three specimens, agreeing with the type, communicated by Dr. Candèze. It has the third joint only a little longer than the second; and the species is best placed in his second group, near *nocturnus*.

### 18. **Monocrepidius notatus.** (Tab. XV. fig. 13, ♂.)

Moderately elongate, broad, rather convex, finely pubescent; ferruginous or testaceous; the head usually infuscate; the prothorax with a broad black or pitchy-brown median vitta, which in one specimen is divided down the middle by a rufo-castaneous stripe; the elytra with a very large, broad, common subquadrate patch at the base, an angulate post-median fascia, and an ante-apical patch (sometimes obsolete), these markings connected along the suture, black or piceous, or obscure castaneous, bordered externally with black; the antennæ and legs testaceous, the under surface in great part piceous or pitchy-brown. Head coarsely, closely punctate, depressed in the middle in front, the frontal carina truncate and moderately prominent; antennæ reaching a little beyond the base of the elytra in the female, longer in the male, joints 2 and 3 very short, subequal. Prothorax a little broader than long, slightly narrowed in front, convex, the sides rounded from the middle forwards and feebly sinuate behind; the hind angles greatly produced, slightly divergent, sharply carinate at the sides above, and with a carina extending from the apex along the basal margin of the prothorax; the surface closely, rather coarsely punctate, and obsoletely canaliculate down the middle. Elytra barely two and one-half times the length of the prothorax, narrowing in both sexes from a little below the base, the apices rounded; rather deeply punctate-striate, the punctures coarse at the sides, becoming finer towards the suture; the interstices convex at the sides and apex, flatter on the disc, thickly, finely punctate. Beneath closely, uniformly punctate. Fourth tarsal joint strongly lamellate beneath.

Length $11\frac{1}{2}$–$12\frac{3}{4}$, breadth $3\frac{1}{2}$–$4\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

*Var.* The prothorax with a piceous stripe on either side of the broad median vitta, not extending to the base or apex; the supra-marginal carina of the hind angles not extending so far forwards, and not parallel with the margin anteriorly, the margins themselves subparallel behind. (♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Five specimens of the typical form, and one of the variety; the latter is probably

distinct, but on a single specimen it is inadvisable to name it. Closely allied to *M. nocturnus*, Cand., but with the antennæ more elongate in the male, the hind angles of the thorax only feebly divergent, the elytra differently marked, and with the interstices more convex. In the coloration of the elytra *M. notatus* somewhat resembles *M. repandus*, Cand., from Bogota, but that insect has the disc of the thorax much more sparsely punctured.

### 19. **Monocrepidius belti.** (Tab. XV. fig. 16, ♂.)

Moderately elongate, broad, rather convex, finely pubescent; pitchy-black, the head obscure rufous in front, the prothorax with the hind angles testaceous; the elytra ferrugineo-testaceous, with a very large, common, subquadrate patch at the base, widening forwards, an angulate post-median fascia, and an ante-apical patch, these markings connected along the suture, pitchy-black; the antennæ, legs, and epipleuræ testaceous. Head closely, rather coarsely punctate, the frontal carina moderately prominent; antennæ short, not reaching as far as the hind angles of the prothorax, joint 3 slightly longer than 2. Prothorax broader than long, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles greatly produced, slightly divergent, sharply carinate at the sides above, and with a carina extending from the apex along the basal margin of the prothorax; the surface closely, rather coarsely punctate, and feebly canaliculate down the middle behind. Elytra moderately long, a little rounded at the sides, narrowing from about the basal third, the apices rounded; punctate-striate, the punctures fine on the disc, coarse at the sides; the interstices flat on the disc, convex at the sides, thickly, finely punctate. Fourth tarsal joint lamellate beneath.

Length 11¼, breadth 3¾ millim. (♂.)

*Hab.* NICARAGUA, Chontales (*Belt*).

This insect so closely resembles the female of *M. notatus* that I had at first placed it with that species. Compared with the male of *M. notatus*, it may be at once known by the much shorter antennæ, and by its relatively broader and less elongate shape, the thorax pitchy-black, the hind angles excepted.

### 20. **Monocrepidius rugicollis.**

Elongate, broad, convex, subopaque; pitchy-brown, the hind angles of the prothorax, and the epipleuræ, and in one specimen the sides of the elytra also indeterminately, ferruginous; the antennæ and palpi ferrugineo-testaceous, the legs flavous; above and beneath clothed with short, fine, fulvous or greyish hairs. Head very coarsely, deeply, closely punctate, depressed in the middle in front, the frontal carina subtruncate and moderately prominent; antennæ short, about reaching the base of the elytra, joint 3 short, a little longer than 2, the two together scarcely as long as 4. Prothorax convex, fully as long as broad, slightly narrowed in front, the sides rounded from the middle forwards and sinuate behind, the disc somewhat abruptly declivous before the base; the hind angles greatly produced, divergent, carinate at the sides above, and with a carina extending from the tip along the basal margin of the prothorax; the surface densely, coarsely, uniformly punctate, and canaliculate behind. Elytra barely two and one-half times the length of the prothorax, narrowing from about the basal third, rounded at the apex, the apices slightly divergent; deeply and rather coarsely punctate-striate, the punctures distinct throughout; the interstices convex at the sides and apex, almost flat on the disc towards the base, thickly, finely punctate. Fourth tarsal joint strongly lamellate beneath.

Length 12–13, breadth 3½–4 millim. (♀.)

*Hab.* GUATEMALA, Cerro Zunil, Pantaleon (*Champion*).

Two specimens, both from the Pacific slope. Closely allied to *M. probus*, Cand.; but

differing from it in having the head and thorax much more coarsely punctured, the thorax fully as long as broad (not so long as broad in either sex of *M. probus*), and the elytra more coarsely punctate-striate, with the interstices more convex. The third joint of the antennæ is very little longer than the second.

### 21. **Monocrepidius posticus.**

*Elater posticus*, Eschsch. Entomograph. i. p. 76 (1822) [1].
*Monocrepidius posticus*, Cand. Monogr. Elat. ii. p. 256 [2].

Var. $\alpha$. The prothorax with a median line, the anterior angles, and in some specimens the sides also, ferruginous; or ferrugineo-testaceous, with an indistinct divided discoidal patch.
Var. $\beta$. The prothorax with a median line, and the elytra with an oblong spot about the middle of the disc, ferruginous.
Var. $\gamma$. The elytra each with an oval spot at the apex, and sometimes an oblong spot at the middle, ferruginous or testaceous.
Var. $\delta$. The prothorax with a ferruginous median stripe; the elytra ferruginous, with a very large scutellar patch and a common cruciform mark towards the apex, these markings sometimes connected at the sides and suture, black.

*Hab.* Mexico, Cordova (*Höge*), Yucatan (*Pilate*, *in coll. Janson*), Temax in North Yucatan (*Gaumer*); Panama, Volcan de Chiriqui (*Champion*), Obispo (*Salvin*).—Brazil [2], Santa Catharina [1]; Antilles, Grenada, St. Vincent.

The numerous specimens before me from our region cannot be satisfactorily separated from others from Brazil in the Janson collection determined as *M. posticus* by Candèze.

The coloration of the upper surface, as in *M. vespertinus*, *M. varians*, &c., is very variable. The variety $\alpha$ is from Yucatan and Chiriqui, some of the Chiriqui specimens having the thorax in great part ferrugineo-testaceous; the variety $\beta$, represented by one specimen, is from Cordova; the variety $\gamma$ is from the islands of Grenada and St. Vincent, and one of the Yucatan specimens shows traces of the apical elytral spot; the variety $\delta$ is from Yucatan and Chiriqui. The scutellum, as in the Brazilian specimens, is more or less ferruginous or rufous. In the Yucatan examples the interspaces between the punctures on the thorax are very minutely reticulate and dull, but I cannot separate them from the others from Panama, &c. The punctuation of the thorax is coarser and less dense than in *M. aversus*, *M. varians*, *M. bipustulatus*, &c. The insect is allied to *M. piceus*, Steinh., from Colombia, but it is more elongate and less depressed. Candèze also gives [2] Buenos Ayres as a locality for *M. posticus*.

### 22. **Monocrepidius exclamationis.** (Tab. XV. fig. 14, var.)

*Æolus exclamationis*, Cand. Monogr. Elat. ii. p. 303, t. 5. fig. 25 [1].
*Monocrepidius vespertinus*, Steinh. Col. Hefte, xiv. p. 123 (nec Fabr.) [2].
*Monocrepidius incommodus*, Fleut. Ann. Soc. Ent. Fr. 1891, p. 279 [3].

*Hab.* Mexico, Cordova, Tapachula (*Höge*), Teapa in Tabasco (*Pilate*, *Höge*, *H. H. Smith*); British Honduras (*coll. Janson*); Guatemala, Teleman and San Gerónimo in

Vera Paz, Rio Naranjo, Paraiso, Zapote (*Champion*) ; PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).—COLOMBIA [2], Carthagena [1] ; VENEZUELA [3].

A very variable species. The varieties are not peculiar to any one locality, as most of them have been collected together at Teapa by Mr. H. H. Smith, and at Rio Naranjo and Paraiso by myself. In the palest forms the dark markings on the thorax are reduced to a median vitta, abbreviated behind, and a narrow streak at the margins, and those on the elytra to a subtriangular scutellar patch and an angulated post-median fascia, connected or not at the suture. In the darkest specimens the thorax has only the anterior and hind angles testaceous, and the elytra are entirely infuscate. In the form described and figured by Candèze, and in the type of *M. incommodus*, the elytra have a sinuous stripe on the disc extending to a little beyond the middle, and an ante-apical spot, testaceous; in many specimens the sinuous stripe is broken up into two spots.

*M. incommodus*, Fleut., the type of which has been communicated by its describer, does not differ from *M. exclamationis*, Cand. ; the fourth joint of the tarsi is lamellate in both. The punctuation of the thorax is exceedingly fine and close. *M. exclamationis* may be distinguished from *M. inconstans* and *M. vespertinus*, the light-coloured varietal forms of which are very similar, by the thorax being infuscate at the sides, the disc with an undivided median vitta ; the genitalia of the male are also very different, the outer lobes in *M. exclamationis* being slender and feebly curved outwards, and armed on the exterior edge near the tip with one long and two short projecting points. A specimen from British Honduras is figured.

### 23. **Monocrepidius inconstans.** (Tab. XV. fig. 15.)

Moderately elongate, feebly shining, finely pubescent; testaceous or ferrugineo-testaceous, the head piceous or fuscous, testaceous in front; the prothorax with two spots or vittæ on the anterior part of the disc, and the elytra with a large subtriangular patch at the base, a common cruciform mark or patch beyond the middle, and sometimes the sides anteriorly, piceous or black; the antennæ testaceous, the legs flavous. Head convex, thickly, finely punctate, the frontal carina rounded and not prominent; antennæ with joint 3 a little longer than 2, the two together about as long as 4. Prothorax not or scarcely as long as broad, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles strongly produced, triangular, divergent, finely carinate at the sides above, the carina short, placed very close to the margin, and confluent with it at the apex of the angle; the surface densely, minutely punctate, with intermixed slightly coarser punctures. Elytra two and one-half times the length of the prothorax, narrowing from about the middle, rounded at the apex; deeply punctate-striate, the interstices feebly convex and very finely rugulose.

*Var.* The prothorax with two broad vittæ on the disc, extending nearly or quite to the base, and the elytra entirely, fuscous or piceous.

Length 5–7, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* MEXICO, Puebla (*Sallé*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Rio Naranjo, Zapote (*Champion*).

Seven examples. Closely resembling *M. vespertinus* (Fabr.), of which, at first sight, it

would appear to be nothing more than a small variety; but differing from that insect in having the thorax considerably shorter in both sexes. It is equally variable in colour. The punctures of the thorax are unequal in size. The genitalia of the male are formed very much as in *M. vespertinus*; the outer lobe is curved outwards and truncated at the tip, the apical margin armed with three or four short teeth. A specimen from Teapa is figured.

### 24. **Monocrepidius aversus.**

*Monocrepidius aversus*, Lec. Trans. Am. Phil. Soc. x. p. 482 (1853)[1]; Cand. Monogr. Elat. ii. p. 259[2].

*Hab.* North America, Georgia[1 2].—Mexico, Ventanas in Durango (*Forrer*), Jalapa, Tapachula (*Höge*), Oaxaca (*Sallé*), Teapa in Tabasco (*H. H. Smith*); Guatemala (*Sallé*), Aceituno (*Salvin, Champion*), Chacoj and San Gerónimo in Vera Paz, Guatemala city, Capetillo, Zapote, Rio Maria Linda, Champerico (*Champion*); Costa Rica, Caché, Volcan de Irazu (*Rogers*).

This is a common insect in Central America. The colour of the thorax and elytra is variable, but the scutellum is always flavous or rufous; the thorax has the hind angles, or the entire base, and sometimes a narrow median line or marginal stripe, of this colour; the elytra are usually brown or pitchy-brown, but they sometimes have a broad submarginal vitta or !-shaped mark testaceous. The thorax is a little longer in the male than in the female, and is densely, finely punctate, sometimes with a few scattered slightly coarser punctures intermixed, these becoming a little more distinct at the sides. I have seen upwards of seventy specimens of *M. aversus*, including several from the United States. In the single example from Champerico, on the Pacific coast, the thorax has numerous distinct intermixed coarser punctures, this specimen approaching *M. tumidicollis*, from the Atlantic coast.

### 25. **Monocrepidius bipustulatus.** (Tab. XV. fig. 17.)

Moderately elongate, rather convex, slightly shining; piceous or brown, the hind angles of the prothorax, the scutellum, and a large spot on the outer part of each elytron near the apex, flavous or testaceous, the head in front, a line down the middle of the prothorax, and sometimes the lateral margins also, ferruginous or testaceous; the antennæ testaceous, the legs flavous; the surface thickly clothed with a fine, silky, yellowish-cinereous pubescence. Head convex, closely, very finely punctate, the frontal carina rounded and not prominent; antennæ moderately elongate, joint 3 slightly longer than 2, the two together about the length of 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles broadly triangularly produced, not divergent, finely carinate at the sides above, the carina short, very close to the margin, and extending obliquely inwards in front; the surface densely, very finely punctate, the punctures equal in size. Elytra twice the length of the prothorax, narrowing from about the middle, feebly truncate at the apex; finely punctate-striate, the punctures distinct throughout; the interstices feebly convex, thickly, minutely punctate. Beneath densely, very finely punctate. Fourth tarsal joint somewhat broadly lamellate beneath.

*Var.* The elytra each with an oblique ferruginous spot about the middle.

Length $6\frac{1}{2}$–8, breadth 2–$2\frac{1}{4}$ millim.

*Hab.* GUATEMALA, Chacoj and Teleman in the Polochic valley (*Champion*); NICARAGUA, Chontales (*Belt*, *Janson*); PANAMA, Bugaba (*Champion*).

Twelve specimens, including one of the variety, the latter being from Bugaba. Closely allied to *M. aversus*, Lec., but less opaque, the elytra relatively shorter and each with a large flavous or testaceous spot near the apex. From the similarly-coloured *M. sticturus*, Cand., from Venezuela &c., it may be known by the broader and less acute hind angles of the thorax, the carina of which is much shorter and finer, and extends obliquely inwards in front. *M.* (*Æolus*) *variabilis*, Fleut., from Venezuela, is also a closely allied form; but it has the elytra narrowing from the base, and also differently coloured, the scutellum infuscate, &c. The apical spots in *M. bipustulatus* are sometimes small. A specimen from Teleman is figured.

### 26. **Monocrepidius varians.** (Tab. XV. fig. 18.)

*Monocrepidius varians*, Steinh. Col. Hefte, xiv. p. 121 [1].
*Monocrepidius baleni*, Steinh. loc. cit. p. 122 [2].
*Monocrepidius lætus*, Dej. Cat. 3rd edit. p. 98 [3].

*Hab.* GUATEMALA, San Gerónimo and El Jicaro in Vera Paz (*Champion*); PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).—COLOMBIA [3], Muzo [1], San Carlos [1 2]; VENEZUELA.

This insect is closely allied to *M. vespertinus* (Fabr.)*, from the Middle and Southern United States of North America and Cuba, and, judging from the specimens so named in the Janson collection, was confounded with that species by Candèze, his southern localities referring to *M. varians*. It may be known from *M. vespertinus* by the thorax being longer in both sexes, more finely punctured, and less sinuate at the sides behind; the hind angles, moreover, are broader, with the carina finer and turning obliquely inwards in front (almost parallel with the margin in *M. vespertinus*, *M. inconstans*, &c.). In this last-mentioned character *M. varians* resembles *M. aversus*, Lec., from which it differs in its longer thorax and more attenuate elytra. *M. baleni* is a dark form, with the elytra infuscate; we also have it from San Gerónimo and Bugaba. The elytra are feebly truncate at the apex. In the two specimens from Guatemala the thorax is very densely punctured. The types of Steinheil's species have been kindly communicated by M. René Oberthür. A specimen from Bugaba is figured.

### 27. **Monocrepidius tumidicollis.**

*Monocrepidius tumidicollis*, Cand. Monogr. Elat. ii. p. 261 [1].
*Monocrepidius sericatus*, Schmidt, in litt.

*Hab.* NICARAGUA, Mosquito Coast [1].

* The *M. vespertinus* of Steinheil (Col. Hefte, xiv. p. 123)=*M. exclamationis*, Cand.

There are three specimens of this species in the Janson collection, one from that of Schaum. The insect resembles *M. aversus*, but it is broader and has very distinct coarser intermixed punctures on the thorax.

### 28. **Monocrepidius pictus.** (Tab. XV. figg. 19, 19 *a*, 20, vars.)

*Monocrepidius pictus*, Cand. Monogr. Elat. ii. p. 267 [1].

*Hab.* Mexico, Tierra Colorada in Guerrero and Teapa in Tabasco (*H. H. Smith*), Acapulco, Morelia in Michoacan, Yautepec in Morelos, Mexico city, Cordova, Jalapa, San Juan Bautista in Tabasco, Tehuantepec (*Höge*); Guatemala, Champerico, Paso Antonio (*Champion*), Zacapa (*Sallé* [1]); Nicaragua, Chontales (*E. M. Janson*); Panama, Bugaba, Tolé (*Champion*).—Colombia, Honda on the Magdalena River; Amazons, Ega (*Bates*).

This extremely variable insect has been found in plenty in many of the above-quoted localities. The numerous specimens from Champerico on the Pacific coast, and some others from Tehuantepec, Morelia, and Tolé, are in great part black and unusually large; those from Tabasco, Ega, &c. are very small and brightly coloured. The tuberculate base of the thorax distinguishes it readily from the closely allied *M. bellus* *. We figure two extreme varieties—one from Champerico and one from San Juan Bautista.

### 29. **Monocrepidius bellus.** (Tab. XV. fig. 21, var.)

*Elater bellus*, Say, Journ. Acad. Phil. iii. p. 168 (1823) [1]; Complete Writings, ii. pp. 108, 614 [2].
*Monocrepidius bellus*, Lec. Trans. Am. Phil. Soc. x. p. 484 [3]; Cand. Monogr. Elat. ii. p. 266 [4].
*Cryptohypnus bellus*, Germ. Zeitschr. für Ent. v. p. 147 [5].
*Monocrepidius variegatus*, Steinh. Col. Hefte, xiv. p. 123 [6].
*Monocrepidius venustulus*, Cand. in litt.

*Hab.* North America [1 2], Middle and Western States [3 4].—Mexico, Cordova, Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*), San Juan Bautista in Tabasco (*Höye*); British Honduras, R. Hondo (*Blancaneaux*); Panama, Bugaba (*Champion*).—South America, Magdalena River [6], Ega, Monte Video, Buenos Ayres.

This species appears to be much rarer in Central America than *M. pictus*. The specimens from Tabasco and British Honduras are in great part rufo-testaceous, the thoracic markings being reduced to two or four spots on the disc (entirely obsolete in one specimen), and those on the elytra to some marks at the base and sides and a sharply angulated fascia near the apex. I have examined the type of *M. variegatus*, Steinh. Specimens from Monte Video and Buenos Ayres, in the Janson Collection,

* *M. pictus*, Cand., is incorrectly sunk as a synonym of *M. bellus*, Say, by M. Fleutiaux: *cf.* Ann. Soc. Ent. Belg. 1895, p. 168.

labelled *M. venustulus*, Cand., do not differ from those from North America. We figure a variety from Teapa.

### 30. **Monocrepidius mexicanus.** (Tab. XV. fig. 22.)

Moderately elongate, rather broad, somewhat depressed, dull, finely cinereo-pubescent; the head piceous, with rufous marks in front and behind; the prothorax pitchy-black, with the lateral margins and a median line rufous, and the basal margin and hind angles testaceous; the scutellum and antennæ testaceous; the elytra pitchy-black; the under surface ferruginous, the propleuræ at the sides, the dilated portion of the epipleuræ, and the legs, flavous. Head convex, thickly punctured, with a short smooth carina on the vertex, the frontal carina not prominent; antennæ rather short, joints 2 and 3 equal in length, the two together longer than 4. Prothorax a little broader than long, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles strongly, triangularly produced, scarcely divergent, carinate at the sides above, the carina short and joining the marginal one at the tip; the surface thickly, somewhat coarsely punctate, the interspaces with scattered much finer punctures. Scutellum rather convex. Elytra about twice the length of the prothorax, flattened on the disc, narrowing from the middle, and rounded at the apex; very deeply punctate-striate, the punctures indistinct; the interstices flat on the disc, convex at the sides, and very finely punctured. Posterior coxal plates very broadly dilated inwards. Fourth tarsal joint with a long narrow lobe beneath.

Length 6, breadth 2 millim.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*).

One specimen. Allied to *M. piceus*, Steinh., from Colombia, but broader and more convex; the punctures of the thorax unequal in size. In the punctuation of the thorax it approaches *M. tumidicollis*.

### 31. **Monocrepidius sexpustulatus.** (Tab. XV. fig. 24.)

Moderately elongate, rather convex, shining, finely pubescent; the head and prothorax piceous or fuscous, the latter with a very large patch on either side at the base, sometimes connected, and in one specimen a spot near the anterior angles, testaceous or ferrugineo-testaceous; the scutellum ferruginous; the elytra black, each with three rather large testaceous spots—one close to the shoulder, one, transverse or oblique, about the middle of the disc, nearly reaching the suture, and one on the disc near the apex, the anterior two sometimes connected; the antennæ testaceous, the legs flavous; the under surface testaceous or ferruginous. Head convex, thickly, finely punctate, the frontal carina rounded and moderately prominent; antennæ with joint 3 slightly longer than 2, the two together longer than 4. Prothorax convex, about as long as broad, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles sharply, triangularly produced, slightly divergent, carinate at the sides above, the carina short and joining the marginal one at the tip; the surface sparsely, finely punctate, the interspaces with some exceedingly minute scattered punctures. Scutellum convex in front. Elytra about twice as long as the prothorax, narrowing almost from the base, conjointly rounded at the apex; very deeply punctate-striate, the interstices convex and somewhat roughly punctured. Fourth tarsal joint with a long narrow lobe beneath.

Var. $\alpha$. The testaceous patch on either side of the base of the prothorax smaller; the apical spot on each elytron obsolete and the others small.

Var. $\beta$. The prothorax rufo-testaceous, with a triangular piceous or fuscous patch of variable size on the disc, extending from the apex downwards, sometimes reduced to a short stripe in front; the elytra with the testaceous markings more extended, the second spot reaching the margin.

Var. $\gamma$. The head in front, and the prothorax entirely, rufo-testaceous; the elytra ferrugineo-testaceous, with a short, narrow, sutural stripe in front and a common cruciform mark towards the apex, the latter extending along the suture to the tip, and in one specimen connected at the suture with the anterior mark, black or piceous.

Length $2\frac{3}{4}$–4, breadth 1–$1\frac{1}{4}$ millim.

*Hab.* Mexico (*coll. Janson*); Guatemala, San Gerónimo and Zapote (*Champion*); Panama, Volcan de Chiriqui, David (*Champion*).

Numerous examples. The form I have taken as the type is from San Gerónimo; the var. $\alpha$, one specimen, is from the same locality; the var. $\beta$ is from Mexico, Zapote, and Chiriqui; the var. $\gamma$, two specimens, is from Zapote. This minute species is not very closely allied to any of the other members of the genus here enumerated, the following excepted. In some of the specimens a very minute interstitial punctuation is distinctly visible on the thorax. We figure a typical example from San Gerónimo.

### 32. **Monocrepidius parvulus.** (Tab. XV. fig. 25.)

Short and broad, convex, shining, finely and rather sparsely pubescent; the head piceous; the prothorax ferrugineo-testaceous, with a large, triangular piceous patch on the disc extending from the apex downwards, or piceous, with a large patch on either side at the base and the anterior angles ferrugineo-testaceous; the scutellum ferruginous; the elytra ferrugineo-testaceous, with the basal margin, the suture rather broadly in front, an oblique stripe extending downwards from it to near the middle of the outer margin (interrupted in one specimen), and a common cruciform mark towards the apex, extending along the suture to the tip, piceous or fuscous; the antennæ testaceous, the legs flavous, the under surface ferruginous. Head convex, finely punctured, the frontal carina not prominent; antennæ with joint 3 slightly longer than 2, the two together longer than 4. Prothorax convex, about as long as broad, very little narrower in front than at the base, rounded at the sides, and somewhat abruptly constricted and sinuate immediately before the base; the hind angles strongly, triangularly produced, scarcely divergent, with a short, sharp carina at the sides above; the surface rather sparsely, finely punctate, and canaliculate behind. Scutellum convex. Elytra about one and two-thirds the length of the prothorax, narrowing from the middle, conjointly rounded at the apex; deeply punctate-striate, the interstices convex and sparsely punctured. Fourth tarsal joint with a long narrow lobe beneath.

Length 3, breadth 1 millim.

*Hab.* Mexico, Cordova (*Sallé*), Orizaba (*coll. Janson*).

Two specimens. Allied to *M. sexpustulatus*, but less elongate and relatively broader, the thorax more rounded at the sides, the elytra not twice the length of the thorax, the elytral markings different. The piceous elytral markings consist of a common Λ-shaped mark before the middle and a rather broad cruciform mark towards the apex.

## HETERODERES.

*Heteroderes*, Latreille, Ann. Soc. Ent. Fr. 1834, p. 155; Candèze, Monogr. Elat. ii. p. 350.

The species included under this generic name by Candèze differ from *Monocrepidius* in having a double system of punctuation on the thorax—the interspaces between the larger punctures being densely and very finely punctured,—and in some cases on the head and under surface also. About eighty species of *Heteroderes* are known, the majority of which are from the Old World. The genus is not adopted by Leconte and Horn.

*Monocrepidius suturalis*, Lec. (=*Æolus rufulus*, Cand.), *M. sordidus*, Lec., and *M. robustus*, Horn, belong to it.

| | |
|---|---|
| Fourth joint of the tarsi rather broadly lamellate beneath; the under surface with intermixed coarse punctures . . . . . | *sordidus.* |
| Body broad; the coarse punctures on the prothorax somewhat closely placed. | |
| Body narrow; the coarse punctures on the prothorax more scattered . . | *heterostixus.* |
| Fourth joint of the tarsi very narrowly lamellate beneath. | |
| Under surface without intermixed coarse punctures; elytra elongate; length 8–9 millim. . . . . | *granulatus.* |
| Under surface with intermixed coarse punctures; elytra short; length 3 millim. . . . . | *gibbulus.* |

## 1. Heteroderes sordidus.

*Monocrepidius sordidus*, Lec. Trans. Am. Phil. Soc. x. p. 482 [1]; Cand. Monogr. Elat. ii. p. 271 [2]; Horn, Trans. Am. Ent. Soc. iii. p. 312 [3].

*Heteroderes lantus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 97 (Elat. Nouv. iv. p. 31) [4].

*Hab.* North America, Florida [4], Arizona, Gila River [1 2].—Mexico, Northern Sonora (*Morrison*).

Sent in numbers by Morrison from Sonora. The very fine interstitial punctuation of the thorax is not mentioned by Leconte; it is, however, noticed by Dr. Horn [3]. I have examined a specimen of *H. lantus* communicated by Dr. Candèze, and also various examples of *M. sordidus*, Lec., received from Dr. Horn; they belong to one species.

## 2. Heteroderes heterostixus.

*Heteroderes heterostixus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 96 (Elat. Nouv. iv. p. 30) [1].

Elongate, moderately convex, slightly shining; brown or blackish-brown, the hind angles of the prothorax and the antennæ testaceous, the legs and palpi flavous; the upper surface thickly clothed with a very fine, pruinose, appressed, yellowish-cinereous pubescence, with intermixed semierect hairs; the under surface finely pubescent. Head sparsely, rather coarsely punctate, the interspaces with exceedingly minute punctures; the frontal carina prominent, subtruncate at the middle; antennæ moderately long, joint 3 twice as long as 2, the two together a little longer than 4. Prothorax slightly longer than broad, narrowed in front, the sides rounded from the middle forwards and strongly sinuate behind; the hind angles strongly, acutely produced, divergent, finely carinate at the sides above, the carina short and joining the marginal one at the tip; the surface sparsely, rather coarsely punctate, the interspaces with exceedingly minute punctures, obsoletely grooved down the middle. Elytra about two and one-third times the length of the prothorax, narrowing from the middle, rounded at the apex; deeply punctate-striate, the punctures very distinct throughout; the interstices convex, closely and exceedingly minutely punctate, with widely scattered coarser punctures. Beneath densely, exceedingly minutely punctate, with intermixed coarse punctures. Posterior coxal plates very broadly widened inwards. Fourth tarsal joint strongly lamellate beneath.

Length $6\frac{1}{3}$–$8\frac{1}{2}$, breadth $1\frac{2}{3}$–$2\frac{1}{3}$ millim.

*Hab.* Mexico, Playa Vicente in Vera Cruz (*Höge*), Teapa in Tabasco (*Pilate, H. H. Smith*); Guatemala [1], San Juan in Vera Paz, Guatemala city (*Champion*).

Allied to *H. sordidus* (Lec.), but considerably narrower, and with the coarse punctures on the thorax more scattered, the elytral interstices more convex. Both insects have a double system of punctuation, above and beneath, this being accompanied by a corresponding difference in the vestiture. A fuller description is given from the ten specimens we have received, these agreeing well with the type communicated by Dr. Candèze.

### 3. **Heteroderes granulatus.**

Elongate, rather broad, convex, opaque; brown or blackish-brown, the prothorax with the base on either side, or the inner part of the hind angles, obscure testaceous, the antennæ ferruginous, the legs testaceous; the surface thickly clothed with a short, fine, decumbent fulvo-cinereous pubescence. Head convex, densely, finely punctate, with intermixed coarser punctures, the frontal carina rounded and moderately prominent; antennæ slender, rather short, still shorter in the female, joint 3 nearly twice as long as 2 and a little shorter than 4. Prothorax about as long as broad in the male, shorter in the female, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles strongly, triangularly produced, slightly divergent, sharply carinate above, the carina short and joining the marginal one at the tip, and with a short fine oblique ridge extending inwards from the apex of the angle; the surface very densely, minutely punctate, with scattered intermixed much coarser punctures. Elytra about two and one-fourth times the length of the prothorax, rapidly narrowing from a little below the base, and slightly rounded at the sides, the apices also rounded; finely punctate-striate; the interstices feebly convex at the sides and apex, flat on the disc, densely, minutely reticulate, and also sparsely granulate, the granular elevations becoming more distinct towards the base. Beneath densely, finely punctate, the prosternum sparsely and somewhat coarsely punctured. Posterior coxal plates very broadly widened inwards. Fourth tarsal joint with a long narrow lobe beneath.

Length $8\frac{1}{3}$–$9\frac{1}{4}$, breadth $2\frac{1}{2}$–$2\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Presidio de Mazatlan and Ventanas (*Forrer*).

Two examples. This insect is closely allied to various South American and Antillean forms, from which it may be known by its convex shape and attenuate elytra, the latter with the interstices distinctly granulate (as well as reticulate) and the apices rounded. The minute interstitial punctuation of the thorax is denser, and the larger punctures finer, than in *H. sordidus* and *H. heterostixus*.

### 4. **Heteroderes gibbulus.** (Tab. XV. fig. 26.)

Short and robust, broad, rather dull, finely pubescent, obscure ferruginous, the suture of the elytra infuscate, the legs and antennæ flavo-testaceous. Head convex, thickly punctured, the interspaces exceedingly minutely punctate, the frontal carina rather prominent; antennæ scarcely reaching the base of the elytra, joint 3 a little longer than 2, the two together longer than 4. Prothorax convex, as long as broad, narrowed in front and behind, the sides rounded; the hind angles strongly produced, triangular, acute, not divergent, without distinct carina above; the surface thickly, rather coarsely punctate, the interspaces exceedingly minutely punctate. Elytra about one-half longer than the prothorax, and narrower than it at the base, rounded at the sides in front and rapidly narrowing from the middle, conjointly rounded at the apex; deeply punctate-striate, the interstices convex and closely, exceedingly minutely punctate. Beneath sparsely, coarsely punctate, the interspaces closely and very minutely punctured. Posterior coxal plates broadly widened inwards. Legs rather short; the fourth tarsal joint feebly produced beneath.

Length 3, breadth $1\frac{1}{3}$ millim.

*Hab.* Mexico, Ventanas in Durango (*Höge*).

One specimen only of this peculiar little species has been received. Allied to *H. robustus* (Horn), from Arizona, but much smaller and more convex, the elytra relatively shorter and with convex interstices, the thorax narrowed behind and without distinct carina to the hind angles.

## ÆOLUS.

*Æolus*, Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829); Candèze, Monogr. Elat. ii. p. 272.

*Æolus* is here retained, following Candèze, for those species of Monocrepidiini with the fourth tarsal joint feebly produced beneath. It is connected on the one side with *Monocrepidius* and on the other with *Drasterius*, some of the species being intermediate. *Æolus* includes a large number of species, most of which are from Tropical America; 142 have been described, five only of these being from the Old World. The majority of them have well-defined markings on the thorax and elytra, but the markings are often very variable. Thirty species are here enumerated from Mexico or Central America, seventeen of which are described as new. The North-American *Monocrepidius* (*Drasterius*) *amabilis*, Lec., also belongs to it. The genus is not adopted by Leconte and Horn.

*a*. Supra-marginal carina of the prothorax gradually approaching the margin behind and joining it at the apex of the angle.
  *a'*. Elytra emarginate at the apex, the sutural and outer angles mucronate; antennæ with joint 3 twice as long as 2; supra-marginal carina of the prothorax extending forwards to the middle and joining the marginal carina behind at the apex of the angle . . . . . Species 1.
  *b'*. Elytra rounded at the apex; antennæ with joints 2 and 3 equal, or 3 not much longer than 2.
    *a''*. Supra-marginal carina of the prothorax extending forwards to the middle and joining the marginal carina behind at the apex of the angle; scutellum feebly or moderately convex . . . . . Species 2–10.
    *b''*. Supra-marginal carina of the prothorax shorter, not extending forwards to the middle.
      *a'''*. Scutellum feebly or moderately convex . . . . . Species 11–16.
      *b'''*. Scutellum with a conically raised prominence in the middle . . . Species 17–19.
*b*. Supra-marginal carina of the prothorax almost or quite parallel with the marginal carina, and abbreviated behind; elytra rounded at the apex; scutellum feebly or moderately convex; antennæ with joints 2 and 3 equal, or 3 not much longer than 2.
*c'*. Supra-marginal carina of the prothorax extending forwards to the middle.
  *c''*. Elytra conjointly rounded at the apex . . . . . Species 20–27.
  *d''*. Elytra separately rounded at the apex . . . . . Species 28.
*d'*. Supra-marginal carina of the prothorax shorter, not extending to the middle.
  *e''*. Elytra not narrowed at the base . . . . . Species 29.
  *f''*. Elytra narrowed at the base . . . . . Species 30.

### 1. **Æolus bimucronatus.** (Tab. XV. figg. 23, 23 *a*.)

Elongate, moderately convex, subopaque, very finely pubescent; flavo-rufous or ferrugineo-testaceous, the head, except in front, more or less infuscate, the hind angles of the prothorax flavo-testaceous; the elytra with the basal third or fourth, and a broad transverse fascia beyond the middle, narrowly divided at the suture, black or pitchy-black; the scutellum, under surface, and antennæ ferruginous, the legs flavo-testaceous. Head convex, closely, very finely punctate, the frontal carina rounded and rather prominent; antennæ with joint 3 nearly twice as long as 2, the two together slightly longer than 4. Prothorax as long as broad, narrowed in front, the sides parallel behind and feebly rounded from the middle forwards; the hind angles broadly, triangularly produced, acute, finely carinate at the sides above, the carina extending forwards to about the middle of the prothorax and connected at the apex of the angle with a short faint oblique ridge; the surface dull, closely, minutely punctate. Elytra twice the length of the prothorax, and narrower than it, narrowing from the base, the apices truncate, each finely mucronate at the sutural and outer angles; deeply and rather finely punctate-striate, the interstices feebly convex and somewhat roughly punctured.

Length $6\frac{1}{2}$–$8\frac{1}{4}$, breadth (of the prothorax) $1\frac{7}{8}$–$2\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Panama, Bugaba, Caldera, Volcan de Chiriqui (*Champion*).

Seven examples. Allied to *Æ. platynotus*, Cand., from the Amazons; but differing from it in the longer apical joint of the tarsi, and in its narrower, immaculate thorax, with the carina of the hind angles longer and nearly parallel with the margin in front. The thoracic carina varies a little in length. In one specimen the black on the base of the elytra extends a little downwards along the suture and at the sides. The post-median fascia varies in width, but it is more or less divided at the suture. Dr. Candèze informs me that the insect is quite distinct from his *Æ. steinheili*, from Colombia.

### 2. **Æolus nigromaculatus.**

*Elater nigromaculatus*, Drap. Ann. Gén. Sci. Phys. iii. p. 271, t. 42. fig. 2 (1820) [1].
*Æolus nigromaculatus*, Cand. Monogr. Elat. ii. p. 301, t. 5. fig. 15 [2].

*Hab.* Nicaragua, Chontales (*E. M. Janson*); Panama, Chiriqui (*Ribbe*), Bugaba, Caldera, and David in Chiriqui (*Champion*). — Colombia [2]; Guiana [1 2]; Amazons; Antilles, Grenada I., Mustique I.

This widely distributed species varies greatly in size, the Chiriqui specimens varying from 6–$9\frac{1}{2}$ millim. in length. It varies very little in coloration. The punctuation of the thorax is coarse. The very long thoracic carina distinguishes it from *Æ. pulchellus*, apart from the difference in coloration. The insect has recently been found in plenty by Mr. H. H. Smith in the Island of Grenada.

### 3. **Æolus facetus.** (Tab. XVI. figg. 1, 1 *a*, var.)

*Æolus facetus*, Cand. Monogr. Elat. ii. p. 318, t. 5. fig. 33 [1].

Var. *a*. The discoidal patch or vitta on the prothorax greatly dilated, and divided down the middle; the elytra (as in the type) with a broad subtriangular patch at the base, extending to the humeri, a broad post-median fascia, and the suture narrowly, black.

Var. β. The median vitta on the prothorax entire; the elytra with a broad sutural stripe, gradually widening forwards and not reaching the base, and a post-median fascia, more or less constricted at the middle of the disc, black. (Fig. 1.)

*Hab.* NICARAGUA, Chontales (*Belt, E. M. Janson*); PANAMA, Bugaba, Caldera, and David in Chiriqui (*Champion*), Matachin (*Schunke, in coll. Oberthür*).—GUIANA [1].

Found in numbers by myself in Chiriqui. The three forms were found at the same localities, and I have no doubt they belong to one variable species. The antennæ about reach the hind angles of the thorax in the male, and are a little shorter in the female. The supra-marginal carina of the thorax is connected with the marginal one behind. The scutellum is infuscate or black. The variety β closely resembles *Æ. garzoni*, Steinh., from Colombia; but in that insect the elytra have a common transverse patch immediately below the base, a narrow sutural stripe, and a post-median fascia, black, the head and thorax, moreover, being more finely punctured. According to the specimens in the Janson collection named by Candèze, two species are confused under the name *Æ. facetus*—one with the antennæ short in the male, the hind angles of the thorax not divergent, and the supra-marginal carina of the latter entire, as in our insect, and the other with the antennæ elongate in the male, the hind angles of the thorax divergent, and the supra-marginal carina of the latter abbreviated behind,—both being from Guiana, and from the Dejean collection; the description and figure seem to apply best to our species. We figure a specimen of the var. β from David.

### 4. **Æolus hexastigma.** (Tab. XV. fig. 27.)

Elongate, feebly convex, shining. finely pubescent; flavous or pale testaceous, the labrum, mandibles, frontal carina, and base of the head, black; the prothorax with a rather narrow median vitta (widened in front), the apical, basal, and lateral margins, and the hind angles, black; the scutellum black; the elytra with the suture, a narrow transverse fascia before, and another beyond the middle, the apex, and the basal and lateral margins very narrowly, black, these markings surrounding three very large, sharply defined spots of the ground-colour on each elytron; the antennæ fuscous or pitchy-brown; the legs flavous, the tarsi usually more or less infuscate; beneath flavous, the head, the prosternal sutures and process, the mesosternum, the sides of the metasternum, the epipleuræ, the basal margin of each ventral segment, and a spot on the middle of the fifth segment, black. Head convex, thickly, moderately finely punctate, the frontal carina rounded; antennæ with joint 3 slightly longer than 2, the two together about as long as 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles strongly and acutely produced, slightly divergent, sharply carinate at the sides above, and with a short oblique ridge extending inwards from the apex of the angle, the supra-marginal carina extending forwards as far as the middle of the prothorax and joining the marginal one at the tip; the surface thickly, moderately finely punctate. Elytra twice the length of the prothorax, gradually narrowing from about the basal third, conjointly rounded at the apex; rather coarsely punctate-striate, the punctures very distinct; the interstices moderately convex and very sparsely punctured. Beneath rather sparsely punctured, the punctures on the propleuræ and on the sides of the metasternum exceedingly coarse, those on the other parts fine.

Length 6–7, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* GUATEMALA, Panzos and Teleman in Vera Paz (*Champion*).

Found in plenty on the banks of the River Polochic, the specimens showing no sign

of variation. This species is perhaps nearest allied to *Æ. polygrammus*, Cand., though very different in coloration. The insect is unknown to Dr. Candèze.

### 5. **Æolus trimaculatus.** (Tab. XVI. fig. 2.)

Elongate, narrow, rather convex, shining, finely pubescent; testaceous or ferrugineo-testaceous, the head with the posterior half fuscous or black; the prothorax with a discoidal patch or median vitta, not reaching the base or the apical margin, black; the elytra with a triangular scutellar patch (extending to the scutellum), and a transverse mark or spot on the disc at about one-third from the apex, sometimes reaching the suture, black, the base on either side of the scutellum dilute testaceous; the antennæ and under surface ferruginous, the legs flavous. Head convex, rather coarsely punctured, the frontal carina rounded and moderately prominent; antennæ reaching the hind angles of the prothorax, joints 2 and 3 short, subequal, the two together about as long as 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and parallel behind; the hind angles strongly, acutely produced, carinate at the sides above, the carina extending forwards to the middle of the prothorax and joining the marginal one at the tip; the surface thickly, rather coarsely punctate. Elytra about twice as long as the prothorax, narrowing from the middle, conjointly rounded at the apex; rather finely, but sharply punctate-striate, the interstices flat on the disc, feebly convex at the sides, and roughly punctured.

Length $4\frac{1}{2}$–$6\frac{1}{2}$, breadth $1\frac{1}{8}$–2 millim.

*Hab.* PANAMA, Bugaba, David, and Caldera in Chiriqui (*Champion*).

Four examples, varying greatly in size. This insect resembles *Æ. signatipennis*, Cand., from Guiana, but it is narrower, and without the distinct, oblique, additional carina within the hind angles of the thorax, the supra-marginal carina not abbreviated behind; it also has the head infuscate behind, the thorax with a discoidal black patch or vitta, and the scutellar black mark more extended. In one specimen these markings are very much reduced in size; in the other three the elytral markings are connected along the suture. *Æ. flavus*, Fleut., from Venezuela, also resembles the pale form in colour.

### 6. **Æolus testudineus.** (Tab. XVI. figg. 3, 3 *a*.)

Moderately elongate, shining, finely pubescent; the head piceous or black, testaceous in front and at the sides; the prothorax piceous or black, with a large triangular patch on either side behind, extending forwards along the margins to the apex, testaceous; the scutellum piceous; the elytra with a short stripe extending down the suture at the base, a rather broad stripe on the disc before the middle, a short narrow stripe at the sides in front, and a large, broad, common cruciform mark extending from the middle to the apex, these markings sometimes connected, piceous or black; the antennæ, legs, and under surface testaceous. Head convex, thickly punctured, with a short smooth carina on the vertex, the frontal carina rounded and moderately prominent; antennæ about reaching the hind angles of the prothorax, joints 2 and 3 very short, equal, the two together not so long as 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles strongly, triangularly produced, acute, finely carinate at the sides above, the carina extending forwards to beyond the middle of the prothorax, and joining the marginal one at the tip; the surface thickly, finely punctate. Elytra twice the length of the prothorax, narrowing from about the basal third, conjointly rounded at the apex; finely punctate-striate, the striæ becoming deeper and more coarsely punctured towards the sides; the interstices flat on the disc, feebly convex at the sides, roughly punctured.

Length 5–6, breadth $1\frac{1}{3}$–$2\frac{2}{3}$ millim.

*Hab.* GUATEMALA, Paso Antonio (*Champion*).

Two specimens, from the banks of the lagoons near the Pacific coast. This species

belongs to Candèze's first section of the genus; it should be placed near *Æ. intricatus*, Cand., from Brazil.

### 7. **Æolus tripartitus.** (Tab. XVI. figg. 4, ♂; 4 *a*, antenna.)

Moderately elongate, rather convex, shining, finely pubescent, with widely scattered intermixed fine erect hairs; bright ferrugineo-testaceous, the scutellum black, the elytra with three transverse black fasciæ—one at the base, one slightly before the middle, and one near the apex, the first and second connected along the suture, the third interrupted at the suture. Head sparsely, finely punctate, the frontal carina rounded and moderately prominent; antennæ in the male very elongate, extending to the basal third of the elytra, shorter in the female, joints 2 and 3 very short, equal, 4 in the male four times as long as 3 and very much longer than 5. Prothorax about as long as broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles greatly produced, acute, slightly divergent, finely carinate at the sides above, and with a short oblique ridge extending from the apex inwards, the supra-marginal carina extending forwards to about the middle of the prothorax and connected with the marginal one at the tip; the surface sparsely, minutely punctate. Elytra twice the length of the prothorax, gradually narrowing from the base, conjointly rounded at the apex; finely and lightly punctate-striate, the punctures distinct; the interstices feebly convex and sparsely punctured.

Length $5\frac{1}{4}$–$5\frac{1}{2}$, breadth $1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Panama, Bugaba (*Champion*).

Three males and one female. Closely allied to *Æ. trifasciatus*, Steinh., from Colombia, the types of which have been communicated by M. René Oberthür, but considerably smaller, the punctuation of the head, thorax, and elytral interstices much finer and sparser, the third fascia of the elytra interrupted at the suture, broader, and placed nearer the apex.

### 8. **Æolus vulneratus.**

*Monocrepidius vulneratus*, Cand. Elat. Nouv. iii. p. 48[1].

"Niger, nitidus, breviter griseo-pubescens; antennis rufis, articulis 2 et 3 minutis; prothorace latitudini longitudine æquali, apice angustato, punctato, subsulcato, angulis posticis validis, longe carinatis, rufis; elytris fortiter punctato-striatis, postice rufo utrinque bimaculatis; subtus pedibusque rufescentibus.—Long. 9, lat. $2\frac{1}{2}$ millim."

*Hab.* Mexico [1].

We have not received a specimen of this species, the type of which has been kindly communicated by Dr. Candèze. The penultimate joint of the tarsi is rather feebly excavate above, and the insect seems to me to be better placed in *Æolus*. It approaches *Æ. cruciger*, Steinh., but differs from it in having the thoracic carina not abbreviated behind.

### 9. **Æolus fumatus.**

Elongate, narrow, moderately convex, shining, finely pubescent; piceous or black, the anterior and hind angles of the prothorax, and the antennæ, testaceous, the legs flavous, the epipleuræ reddish-brown. Head convex, thickly punctured, with a short smooth carina on the vertex; the frontal carina moderately prominent; antennæ rather short, joints 2 and 3 short, equal in length, the two together not longer than 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and feebly sinuate

behind; the hind angles strongly produced, acute, slightly divergent, finely carinate at the sides above, the carina extending forwards to the middle of the prothorax and joining the marginal one at the tip; the surface sparsely, finely punctate. Elytra about twice the length of the prothorax, rapidly narrowing from the middle, conjointly rounded at the apex; finely punctate-striate, the interstices flat on the disc, convex at the sides, and somewhat roughly punctured, the sculpture becoming granulate towards the base.

Length 3–5, breadth $\frac{7}{8}$–$1\frac{1}{4}$ millim.

*Hab.* GUATEMALA, San Juan in Vera Paz (*Champion*).

Seven specimens, varying greatly in size. Allied to *Æ. nigrinus*, Cand., but only one-half the size, and also much narrower, the thorax finely and sparsely punctured, the supra-marginal carina extending to the apex of the hind angles, &c. The insect is unknown to Dr. Candèze.

### 10. **Æolus hæmorrhoidalis.**

Elongate, rather narrow, moderately convex, finely pubescent, slightly shining; piceous or black, the head ferruginous in front; the prothorax with the anterior margin on either side and the hind angles testaceous; the elytra with the apex narrowly, and the epipleuræ, testaceous; the under surface ferruginous or brown, the antennæ testaceous, the legs flavo-testaceous. Head convex, closely punctured, with a short smooth carina on the vertex, the frontal carina rounded and not prominent; antennæ moderately long, joint 3 much longer than 2, the two together about as long as 4. Prothorax longer than broad, very little narrowed in front, the sides almost straight and very gradually converging from the hind angles; the latter greatly produced, slightly divergent, acute, and sharply carinate at the sides above, the carina extending forwards to beyond the middle of the prothorax and joining the marginal one at the tip; the surface thickly, moderately finely punctate, the punctures equal in size. Elytra about twice as long as the prothorax, gradually narrowing from the middle, and slightly truncate at the apex; finely punctate-striate, the punctures distinct; the interstices feebly convex and somewhat roughly punctured, the sculpture becoming granulate towards the base.

Length 6, breadth $1\frac{1}{2}$ millim. (♂.)

*Hab.* PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Four specimens. This insect closely resembles *Æ. fumatus*, but it is more elongate and larger; the third joint of the antennæ is longer; the thorax is very little narrowed in front and has a longer supra-marginal carina; the elytra have the apex narrowly testaceous; and the penultimate tarsal joint is less deeply excavate above.

### 11. **Æolus obliquus.** (Tab. XVI. fig. 5.)

*Æolus obliquus*, Cand. Monogr. Elat. ii. p. 294, t. 5. fig. 30[1].

*Hab.* MEXICO, Tuxtla in Vera Cruz (*Sallé*[1]).

A single example of this species is contained in the Sallé collection, and a second in that of Janson, the latter having been acquired from Candèze.

### 12. **Æolus pulchellus.** (Tab. XVI. figg. 6, 6 *a*.)

*Æolus pulchellus*, Cand. Monogr. Elat. ii. p. 293[1].

*Hab.* MEXICO[1], Cordova (*Sallé*, *Höge*), Orizaba (*coll. Janson*), Atoyac in Vera Cruz

(*H. H. Smith*), Almolonga, Jalapa, Tapachula (*Höge*); GUATEMALA, Panzos, Teleman, and Cubilguitz in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt*, *E. M. Janson*).

This is one of the commonest species of *Æolus* within our limits. The thorax has a broad median vitta, narrowing posteriorly, and the sides to a greater or less extent, black. The elytra have a broad oblique patch on the outer part of the disc a little below the base, extending inwards to the second or third stria, a broad sharply angulated fascia towards the apex, extending down the suture behind, and sometimes a short sutural stripe at the base, black. In one specimen, from Cordova, the anterior discoidal patch is connected with the post-median fascia. The supra-marginal carina of the thorax is short. The scutellum is convex in front. A specimen from Atoyac is figured.

### 13. **Æolus marginatus.** (Tab. XVI. fig. 7.)

Moderately elongate, shining, finely pubescent; the head piceous, ferruginous in front; the prothorax testaceous, with a very broad median vitta abruptly narrowing behind, and a short marginal stripe, pitchy-black; the scutellum black; the elytra testaceous, with a broad patch on the disc before the middle, extending to the margin and connected inwards with a short sutural stripe running forwards to the base, a broad sharply angulated fascia towards the apex, extending along the suture to the tip, and the lateral margin from the base to the suture narrowly, pitchy-black; the antennæ testaceous, the basal third of the epipleuræ and the legs flavous, the under surface partly infuscate. Head convex, thickly punctured, with a short carina on the vertex, the frontal carina rounded and moderately prominent; antennæ about reaching the hind angles of the prothorax, joint 3 a little longer than 2, the two together longer than 4. Prothorax as long as broad, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles strongly produced, acute, feebly divergent, carinate at the sides above, the carina rather short and confluent with the marginal one at the tip; the surface thickly, rather coarsely punctate. Elytra a little more than twice the length of the prothorax, flattened on the disc, narrowing from the middle, conjointly rounded at the apex; coarsely and deeply punctate-striate, the interstices rather convex and roughly punctured.

Length $5\frac{1}{2}$, breadth $1\frac{1}{2}$ millim.

*Hab.* MEXICO, Teapa in Tabasco (*Pilate*, *in coll. Janson*).

One specimen. Allied to *Æ. vermiculatus*, from which it differs in having the head and thorax more coarsely punctured, the thorax with the supra-marginal carina not abbreviated behind, and the elytra coarsely and deeply punctate-striate; the elytra somewhat similarly marked, but with the margins black from the base to the apex, and the post-median fascia more sharply angulate, the latter extending rather broadly down the suture to the tip. The elytra have a curved patch at the base, an angulated fascia a little beyond the middle, and a spot on the disc close to the apex, testaceous, the black markings being very sharply defined. Less convex, shorter, and more parallel than *Æ. pulchellus*, the discoidal vitta on the thorax broader and more abruptly narrowed behind, the elytra margined with black, the scutellum flatter, &c.

### 14. **Æolus panamensis.** (Tab. XVI. fig. 8.)

Moderately elongate, rather convex, shining, finely pubescent; ferrugineo-testaceous, the prothorax with a moderately broad vitta on either side of the disc, extending from the base to the apex, black, and the hind angles flavous; the scutellum ferruginous; the elytra with a common elongate-triangular patch extending from the base to the middle, and an elongate Λ-shaped mark on the disc towards the apex, confluent with the corresponding mark on the opposite elytron at the suture, and extending along it to near the apex, black, the apex itself flavo-testaceous; the antennæ fusco-testaceous, with the two basal joints paler, the legs flavous, the under surface ferruginous. Head convex, coarsely, thickly punctate, the frontal carina moderately prominent; antennæ extending to the hind angles of the prothorax, joint 3 nearly twice as long as 2, the two together longer than 4. Prothorax a little longer than broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles greatly produced, not divergent, acute, sharply carinate above, the carina joining the marginal one at the tip; the surface coarsely, closely punctate. Scutellum convex in front. Elytra twice the length of the prothorax, rapidly narrowing from about the middle, conjointly rounded at the apex; very deeply and coarsely punctate-striate, the interstices convex and roughly punctured.

Length 7, breadth 2 millim.

*Hab.* PANAMA, David in Chiriqui (*Champion*).

One specimen. Allied to *Æ. pulchellus* and *Æ. melliculus*, Cand., but differing from them in coloration, and in the coarse and deep punctuation of the head and thorax, the latter with the hind angles more sharply carinate above.

### 15. **Æolus melliculus.** (Tab. XVI. fig. 9, genitalia, ♂.)

*Æolus melliculus*, Cand. Monogr. Elat. ii. p. 295, t. 5. fig. 9 (1859) [1]; Crotch, in Godm. Nat. Hist. Azores, p. 75 [2].

*Æolus moreleti*, Tarn. Col. Açor. p. 94 (1860) [3].

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*), San Juan Bautista in Tabasco (*Höge*), Yucatan (*Pilate*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Cubilguitz and Panzos in Vera Paz (*Champion*); HONDURAS (*Sallé*); COSTA RICA, Buenos Aires (*Pittier, in Mus. Brit.*); PANAMA, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Carthagena to Buenos Aires [1]; ANTILLES, Grenada; AZORES [2 3].

Var. *α*. The prothorax with two broad black or fuscous vittæ on the disc, narrowing or abbreviated behind, sometimes occupying the greater part of the surface, sometimes narrower and not extending beyond the middle.

*Hab.* MEXICO, Cordova and Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); COSTA RICA, Buenos Aires (*Pittier, in Mus. Brit.*).—AZORES.

Var. *β*. The prothoracic markings entirely obliterated.

*Æolus rubricatus*, Cand. Monogr. Elat. ii. p. 294 [4].

*Hab.* MEXICO (*coll. Janson, ex Schaum* [4]), San Nicolas in Vera Cruz, Tuxtla (*Sallé* [4]), Teapa (*Pilate*), San Juan Bautista in Tabasco (*H. H. Smith, Höge*), Yucatan (*Pilate*); GUATEMALA, Panzos, Teleman, and Chacoj in Vera Paz (*Champion*).—ANTILLES, Grenada.

An extremely variable species. The typical form has been sent in plenty from San

Juan Bautista, in company with the var. *rubricatus*; the var. $\alpha$ we have received only from the Mexican State of Vera Cruz. In a long series from almost any locality the var. *rubricatus* is to be found. The elytra usually have a subtriangular patch at the base and a common cruciform mark beyond the middle—the latter sometimes joined to a spot on the outer margin, and forming an interrupted fascia,—connected along the suture, black. In some specimens the suture is broadly black, and in the others the basal patch is not connected with the post-median mark. The scutellum is rufo-testaceous. The insect has, no doubt, been introduced into the Azores.

### 16. **Æolus tropicalis.** (Tab. XVI. figg. 10; 11, var.; 11 *a*, genitalia, ♂.)

Moderately elongate, rather convex, shining, finely pubescent; testaceous or ferrugineo-testaceous, the head, except in front, fuscous or piceous; the prothorax with a large discoidal black patch, extending from the apex to about one-third from the base and usually longitudinally excised in the middle behind; the elytra with a broad patch at the base, deeply excised towards the sides behind, and a broad cruciform mark towards the apex, connected at the suture, and sometimes at the sides also, black (these markings leaving a broad angulated interrupted median fascia, widening outwards, and a large oblong spot at the apex, testaceous); the antennæ testaceous, the legs flavous, the under surface usually in great part piceous. Head convex, thickly, finely punctate, the frontal carina rounded and moderately prominent; antennæ with joints 2 and 3 short and subequal, the two together about the length of 4. Prothorax convex, slightly longer than broad, narrowed in front, the sides rounded anteriorly and feebly sinuate behind; the hind angles broadly triangularly produced, sharp, with a short fine carina at the sides above, the carina joining the marginal one at the tip; the surface thickly, finely, uniformly punctate. Elytra scarcely twice the length of the prothorax, narrowing from about the middle, and conjointly rounded at the apex; very deeply punctate-striate, the interstices convex, and thickly minutely punctate.

Var. $\alpha$. The prothorax black, with the base and anterior angles testaceous.

Var. $\beta$. The prothorax with two short vittæ on the disc in front, and the elytra with a triangular basal patch and an angulated post-median fascia, black.

Length $5\frac{1}{4}$–7, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* MEXICO, Teapa in Tabasco (*Höge*); BRITISH HONDURAS (*coll. Janson*); GUATEMALA, Teleman and Chacoj in Vera Paz (*Champion*).

Collected in numbers by myself in the vicinity of the Polochic River, a single specimen only from each of the other localities. Like many of the allied forms, this species is very variable in colour, according to the extent of the black markings. *Æ. tropicalis* is closely allied to *Æ. melliculus*, and greatly resembles the var. $\alpha$ of that insect; but may be known from it by the more parallel elytra and by the very different form of the genitalia in the male; the last-mentioned character will be best understood from our figures on Tab. XVI. The var. $\alpha$ is from Teapa; the type and the var. $\beta$ from British Honduras and the Atlantic slope of Guatemala. We figure a typical specimen from Teleman and a male of the dark variety from Teapa, also the genitalia of the latter.

### 17. **Æolus circumscriptus.** (Tab. XVI. fig. 12, var.)

*Elater circumscriptus*, Germ. Ins. Sp. nov. p. 46 (1824) [1] (nec Zeitschr. für Ent. v. p. 146) (nec Cand. Cat. Méthod. p. 78).

Moderately elongate, rather convex, shining, finely pubescent; testaceous or rufo-testaceous, the head usually fuscous or piceous, paler in front; the prothorax with a broad black or piceous median vitta, narrowing behind; the scutellum piceous; the elytra with an elongate patch on the disc, a broad sharply angulated fascia towards the apex, and a short sutural stripe at the base (sometimes obsolete), black or piceous; the antennæ testaceous, the legs flavous, the under surface rufo-testaceous. Head convex, thickly punctured, the frontal carina rounded and not prominent; antennæ with joint 3 a little longer than 2, the two together slightly longer than 4. Prothorax about as long as broad, narrowed in front, the sides strongly sinuate behind; the hind angles narrowly, acutely produced, divergent, carinate above, the carina short and joining the marginal one at the tip; the surface thickly and rather coarsely punctate. Scutellum with a conically raised prominence in front. Elytra about twice as long as the prothorax, rapidly narrowing from the middle, and rounded at the apex; deeply punctate-striate, the punctures distinct throughout, the interstices feebly convex and roughly punctured. Fourth tarsal joint slightly excavate above.

*Var.* The black markings more extended, the discoidal patch forming a broad stripe on each elytron. (Fig. 12.)

Length $5\frac{1}{3}$–$6\frac{1}{2}$, breadth $1\frac{1}{2}$–$1\frac{3}{4}$ millim.

*Hab.* MEXICO, Cordova (*Sallé*, *Höge*), Mexico city, Tlacotalpam and Jalapa in Vera Cruz, San Juan Bautista in Tabasco (*Höge*); BRITISH HONDURAS, Belize (*Blancaneaux*); NICARAGUA, Chontales (*Belt*).—COLOMBIA.

The specimens from which the above description is taken agree well with an example labelled "*Elater circumscriptus*, Germ., Am.-bor.," in the Janson collection (from that of Schaum), probably the type. This species is confused in collections with *Drasterius dorsalis* * (Say), and it is probable that all the southern localities given by Candèze for *D. dorsalis* refer to *Æ. circumscriptus*. It may be known from *D. dorsalis* by its narrower shape, the elevated scutellum, the more deeply excavate penultimate joint of the tarsi, and the narrower, more acute, and more divergent hind angles of the thorax, which are also more finely carinate, the carina joining the marginal one at the tip. The insect has been sent in plenty by Herr Höge from Tabasco; the variety, from Mexico city, is coloured like the form described by Germar. Dr. Horn has examined one of our Mexican specimens, and he informs me that the insect is unknown to him. *D. dorsalis* is a common North-American insect, but none of our specimens can be satisfactorily identified with it. We figure an example of *Æ. circumscriptus* from Jalapa.

### 18. **Æolus trilineatus.** (Tab. XVI. fig. 13.)

*Æolus trilineatus*, Cand. Monogr. Elat. ii. p. 293[1].

*Hab.* MEXICO, Tuxtla, San Nicolas in Vera Cruz (*Sallé*[1]); GUATEMALA, Balheu in Vera Paz (*Champion*).

I have seen four specimens of this species—two from Mexico and two from Guatemala; the two latter have the marginal stripe on the thorax less distinct and the discoidal vitta on the elytra almost interrupted at the middle. The scutellum has a strongly raised conical prominence in the centre, a character not mentioned by Candèze.

* This name is incorrectly sunk by Leconte (Trans. Am. Ent. Soc. xii. p. 5) as a synonym of *Æ. elegans* (Fabr.), an Antillean insect.

The thorax has a broad median vitta, narrowing behind, and the sides narrowly, piceous or black. The elytra are comparatively short, and exceedingly coarsely punctate-striate. *Æ. trilineatus* is a close ally of *Æ. circumscriptus*, which has the scutellum similarly formed; but differs from it in having the elytra very coarsely punctate-striate, and the thorax with a dark marginal stripe.

### 19. **Æolus yucatanus.** (Tab. XVI. figg. 14, 14 *a*.)

Elongate, rather depressed, shining, finely pubescent; rufo-testaceous, the head and scutellum black; the elytra with the base narrowly, a short, narrow, oblique stripe extending from the shoulder to the middle of the disc, and a rather large subquadrate spot on the disc towards the apex—incised in front and behind, and obliquely placed,—black; the antennæ and legs flavo-testaceous, the under surface ferruginous. Head convex, thickly, somewhat coarsely punctate, the frontal carina rounded and moderately prominent; antennæ extending to a little beyond the hind angles of the prothorax, joint 3 longer than 2, the two together longer than 4. Prothorax slightly longer than broad, narrowed in front and behind, the sides feebly rounded from the middle forwards and strongly sinuate before the base; the hind angles very narrow, strongly and acutely produced, divergent, finely carinate at the sides above, the carina very short and confluent with the marginal one at the tip; the surface thickly, somewhat coarsely punctate, the punctures a little more scattered along the middle of the disc. Scutellum with a smooth rounded prominence in the middle. Elytra two and one-fourth times the length of the prothorax, narrowing from about the basal third, and conjointly rounded at the apex; coarsely punctate-striate, the interstices rather convex and sparsely punctured.

Length $6\frac{1}{2}$, breadth $1\frac{2}{3}$ millim.

*Hab.* MEXICO, Yucatan (*Pilate, in coll. Janson*).

One specimen. This very distinct species is allied to *Æ. trilineatus* and *Æ. obliquus*, Cand. The hind angles of the thorax are unusually narrow and very acute, with the carina extremely short and fine. The elytral markings resemble those of *Æ. obliquus*, except that the short oblique stripe on the disc at the base starts from the shoulder, instead of from the suture. The scutellum is conically raised in the middle, as in *Æ. trilineatus*.

### 20. **Æolus rodriguezi.** (Tab. XVI. fig. 25.)

*Æolus rodriguezi*, Cand. Ann. Soc. Ent. Belg. 1889, p. 94 (Elat. Nouv. iv. p. 28) [1].

"Niger, subnitidus, griseo-pubescens; fronte punctata; antennis rufis; prothorace latitudine longiore, basi apiceque leviter angustato, æqualiter sat dense punctato, margine antica angulisque posticis rufis; elytris punctato-striatis, interstitiis rugosis, maculis quatuor rufis; pedibus flavis.—Long. 7, lat. $1\frac{4}{5}$ millim."

*Hab.* GUATEMALA [1].

Allied to the South-American *Æ. designatus*, Cand. We are indebted to Dr. Candèze for the loan of the type of this species.

### 21. **Æolus pictus.** (Tab. XVI. figg. 15, 15 *a*, ♂.)

*Æolus pictus*, Cand. Monogr. Elat. ii. p. 333, t. 6. fig. 23 [1].

*Hab.* MEXICO [1] (*coll. Janson*), Chilpancingo in Guerrero (*H. H. Smith*), Tuxtla, Playa

Vicente, Panistlahuaca (*Sallé*), Cordova, Oaxaca, Tapachula (*Höge*); GUATEMALA, Panzos and Chacoj in Vera Paz, Zapote (*Champion*).

*Var.* The elytral vittæ abbreviated at about one-fourth from the apex.

*Hab.* NICARAGUA, Chontales (*Belt*, *E. M. Janson*); COSTA RICA (*coll. Janson*).

This insect is not uncommon in Mexico and Guatemala; it is found upon both the Atlantic and Pacific slopes. The type, a female, is before me; the males differ from it in having the thorax longer, less rounded at the sides, and narrowing from the base, and the antennæ more elongate. The colour of the antennæ and legs is variable: the legs are testaceous in the type, our specimens from Chilpancingo, Panzos, Chacoj, and Oaxaca agreeing in this respect; the examples from Zapote, and many of those from Mexico, have the legs infuscate. The thorax has sometimes the base only broadly black; but in some specimens it has an abbreviated or entire black median line, or even a broad black vitta, as in one of the Zapote examples. The variety merely differs from the type in having the broad submarginal testaceous vitta abbreviated at some distance before the apex of the elytra, as in one of the forms of *Æ. vittatus*. The fifth ventral segment is convex in both sexes, and coarsely, closely punctate, the punctures on the apical half longitudinally confluent, forming deep irregular grooves. A typical male from Chilpancingo is figured.

22. **Æolus vittatus.** (Tab. XVI. figg. 16, ♂; 17, ♀, var.)

*Æolus vittatus*, Cand. Monogr. Elat. ii. p. 332, t. 6. fig. 22[1].

*Æolus tæniatus*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. lxxxii (Elat. Nouv. ii. p. 22)[2].

*Hab.* GUATEMALA[2] (*Sallé*), near the city (*Salvin*); NICARAGUA (*Sallé*, *coll. Janson*), Chontales (*Belt*); COSTA RICA (*Mus. Brit.*).—SOUTH AMERICA[1].

Varies greatly in colour. In the form described by Candèze under the name *Æ. vittatus* the thorax is rufous, with the base broadly black, and the elytral vittæ are abbreviated; in *Æ. tæniatus* the thorax is black, with the anterior angles, or a long curved stripe extending from them downwards (as in a Guatemalan specimen in the Janson collection, labelled *Æ. vittatus* by Candèze), rufous, and the elytral vittæ entire or abbreviated. The insect is very closely allied to *Æ. pictus*, but differs from it in the longer and more coarsely punctured thorax in both sexes, the thorax in the male rapidly narrowing from the base forwards. The punctures on the fifth ventral segment are a little less distinctly longitudinally confluent. I have examined the type of *Æ. tæniatus*, Cand. We figure a dark variety of the male from Nicaragua, and a female from Guatemala, the latter from Dr. Candèze's collection.

### 23. **Æolus cruciger.** (Tab. XVI. figg. 18, 18 *a*.)

*Æolus cruciger*, Steinh. Col. Hefte, xiv. p. 124 (1877) [1].

*Var.* The prothorax with a discoidal black patch, which is narrowed in front and behind, and marked with a rufous line down the middle of the basal half; the elytra with the base, the suture very broadly, a post-median fascia, the apex, and the epipleuræ, black; the prosternum in great part black.

*Hab.* Panama, Obispo (*Salvin*).—Colombia [1].

A single specimen from Obispo differs from *Æ. cruciger*, Steinh., the type of which has been communicated by M. René Oberthür, in being more marked with black; it also has the disc of the thorax a little less closely punctured, with a smooth median line. A similar variation in colour is common to *Æ. melliculus* and other species of the genus. The long supra-marginal carina of the thorax is abbreviated behind.

### 24. **Æolus rugipennis.** (Tab. XVI. figg. 19, 19 *a*.)

Elongate, convex, shining, finely pubescent; rufous, the prothorax with a faint infuscate streak about the middle, the scutellum piceous; the elytra black, with a broad transverse rufous median fascia, which is widened inwards and connected along the suture and at the sides with a similarly-coloured narrow apical patch; the under surface, the epipleuræ included, rufo-ferruginous; the antennæ ferruginous, the legs testaceous. Head convex, coarsely, closely punctate, with a short smooth carina on the vertex; the frontal carina rounded and moderately prominent; antennæ very short, not reaching the hind angles of the prothorax, joint 3 slightly longer than 2, the two together about as long as 4. Prothorax much longer than broad, convex, narrowed in front, the sides parallel behind and slightly rounded from the middle forwards; the hind angles strongly, acutely produced, parallel, very sharply carinate above, the carina distant from the margin, extending forwards to beyond the middle of the prothorax, slightly abbreviated behind, and there connected with a short, sharp, oblique ridge; the surface thickly and rather coarsely punctate throughout. Elytra twice the length of, and narrower than, the prothorax, gradually narrowing from the base, the apices slightly divergent at the sutural angle; finely but deeply punctate-striate, the interstices rather convex, roughly punctured, transversely rugose and granulate towards the base. Beneath thickly, somewhat coarsely punctate, the propleuræ with very coarse, scattered, round punctures.

Length 8, breadth (of prothorax) $2\frac{1}{4}$ millim.

*Hab.* Panama, David (*Champion*).

One specimen, probably a female. This insect does not appear to be very closely allied to any described form; it belongs to Candèze's second division of the genus. The elytral interstices are rugose and granulate towards the base, rougher than in any of the allied forms. *Æ. rugipennis* is perhaps best placed near *Æ. circumcinctus*, Cand. The colour is probably variable.

### 25. **Æolus atriceps.** (Tab. XVI. figg. 20, 20 *a*.)

Elongate, convex, shining, finely pubescent; ferrugineo-testaceous, the head entirely black, the prothorax with a rather narrow elongate-oval black patch on the disc before the middle, the scutellum black; the elytra with a short sutural stripe in front, a broad oblique band below the base—extending inwards to the second stria and outwards to the margin, and reaching the humerus,—a sharply angulated fascia towards the apex, continued down the suture to the tip, and the apex itself narrowly, black; the antennæ, epipleuræ, and legs testaceous, the under surface entirely ferrugineo-testaceous. Head convex, coarsely

punctured, with a short smooth carina on the vertex, the frontal carina rounded and not prominent; antennæ reaching the hind angles of the prothorax, joint 3 slightly longer than 2, the two together as long as 4. Prothorax a little longer than broad, narrowed in front, the sides rounded anteriorly and parallel behind; the hind angles strongly produced, acute, parallel, sharply carinate above, and with a short oblique carina extending from the tip inwards, the supra-marginal carina extending forwards to the middle of the prothorax and slightly abbreviated behind; the surface coarsely, thickly punctate. Elytra twice the length of the prothorax, narrowing from the middle, conjointly rounded at the apex; deeply and coarsely punctate-striate, the interstices convex and sparsely punctured.

Length $6\frac{1}{2}$, breadth 2 millim.

*Hab.* GUATEMALA, Paraiso (*Champion*).

One specimen, from the vicinity of the Pacific coast. Allied to *Æ. pulchellus*, Cand.; but differing from it in the coarser punctuation of the head and thorax, the latter parallel behind, immaculate at the sides, and with a much longer and sharper carina, which is abbreviated posteriorly, the elytra black at the tip. The median vitta on the thorax does not reach the apex, and is narrowed in front and behind. The head is deep black.

### 26. **Æolus vermiculatus.** (Tab. XVI. figg. 21, 21 *a*.)

Elongate, rather convex, shining, finely pubescent; testaceous or ferrugineo-testaceous, the head usually infuscate along the middle; the prothorax with a broad median vitta, narrowing behind, and an abbreviated marginal stripe, sometimes connected, black or piceous; the scutellum usually infuscate or black; the elytra with two broad angulated transverse fasciæ—one before the middle, extending narrowly along the suture to the base, and the other towards the apex, extending a short distance along the suture behind—black or piceous; the legs and antennæ flavo-testaceous; the under surface partly infuscate or entirely ferrugineo-testaceous. Head convex, thickly, coarsely punctate, with a short smooth carina on the vertex; the frontal carina somewhat rounded and moderately prominent; antennæ with joints 2 and 3 short, equal in length. Prothorax longer than broad, a little narrowed in front, the sides feebly rounded anteriorly and slightly sinuate or almost straight behind; the hind angles strongly, acutely produced, parallel or slightly divergent, sharply carinate at the sides above, the carina extending forwards for fully one-half—in some specimens three-fourths—the length of the prothorax, slightly abbreviated behind, and there connected with a short fine oblique ridge; the surface somewhat thickly, finely punctate, in some specimens obsoletely canaliculate down the middle behind. Elytra rather more than twice the length of the prothorax, rapidly narrowing from about the middle, rounded at the apex; finely and sharply punctate-striate, the interstices feebly convex and somewhat roughly punctured. Beneath sparsely punctured, the punctures on the propleuræ and on the sides of the metasternum much coarser than on the other parts; the prosternum almost smooth; the apical half of the fifth ventral segment densely, minutely punctate, the punctures here and there longitudinally confluent.

Var. *α*. The anterior elytral fascia divided at the suture.

Var. *β*. The head black, the prothorax black, with the angles testaceous, the elytral fasciæ very broad.

Length 4–7, breadth 1–$1\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* MEXICO, Almolonga, Oaxaca (*Höge*), Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Teleman, Senahu, San Juan, and Chiacam in Vera Paz, Zapote (*Champion*); COSTA RICA (*Pittier, in Mus. Brit.*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Found in abundance by myself at various localities. The varieties described represent the extreme forms. Allied to *Æ. pulchellus*, Cand., but easily separable from it

by the very elongate, posteriorly abbreviated supra-marginal thoracic carina—in some specimens extending fully three-fourths the length of the thorax; the thorax itself is more finely punctured, and the elytra are more finely punctate-striate, with the markings different. The variety $\alpha$ resembles *Æ. pulchellus* in colour, but it has the anterior black mark on the elytra transverse, not oblique. The insect varies greatly in size. The single specimens from Almolonga and Oaxaca differ from the others in having the thoracic carina not extended so far forwards; they apparently belong to the same species. An example from Bugaba is figured.

### 27. **Æolus nigrinus.**

*Æolus nigrinus*, Cand. Monogr. Elat. ii. p. 342 [1].

*Hab.* Mexico, Yucatan (*Pilate, in coll. Janson*), Temax in North Yucatan (*Gaumer*). —Colombia [1], Carthagena.

Two specimens from Yucatan, differing from others from Colombia in their smaller size (6–6½ millim. in length). They have the hind angles of the thorax rufous or rufo-testaceous, and some of the Colombian examples are similarly coloured.

### 28. **Æolus nigritulus.** (Tab. XVI. figg. 22, 22 *a*.)

Elongate, narrow, convex, shining, finely pubescent; black, the hind angles of the prothorax obscure testaceous, the antennæ clear testaceous, the legs flavous. Head moderately convex, sparsely, finely punctate; the frontal carina not prominent, subtruncate; antennæ rather slender, extending to a little beyond the hind angles of the prothorax, joints 2 and 3 subequal, the two together longer than 4. Prothorax convex, as long as broad, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles greatly produced, divergent, sharply bicarinate—the supra-marginal carina extending forwards to beyond the middle of the prothorax and abbreviated behind, the inner carina short and extending obliquely inwards from the apex of the angle; the surface sparsely, very finely punctate. Elytra convex, two and one-third times the length of the prothorax, parallel to the middle and gradually narrowing beyond, separately rounded at the apex; finely punctate-striate; the interstices flat, somewhat roughly punctured, the sculpture becoming rather coarsely granulate at the base.

Length 4, breadth 1 millim.

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

One specimen. Allied to *Æ. nigrinus*, Cand., but only half the size of that insect, and also much narrower and more convex; the thorax and elytra very finely, sparsely punctate, the hind angles of the thorax divaricate. More parallel and more convex than *Æ. fumatus*, the thorax more finely punctured and with more divergent hind angles, the elytra more coarsely granulate at the base and separately rounded at the apex.

### 29. **Æolus discoideus.** (Tab. XVI. figg. 23, 23 *a*.)

Elongate, rather convex, shining, finely pubescent; ferrugineo-testaceous, the head, a spot on either side in front excepted, piceous or black; the prothorax with a broad discoidal black patch, extending almost to the base and apex and narrowing behind; the elytra with a large subquadrate patch on the disc before the middle, not reaching the suture, and a very broad angulate transverse fascia at about one-third

from the apex, black, the suture at the base, and sometimes an oblique stripe extending from it to the discoidal patch, piceous; the legs and antennæ flavo-testaceous; the under surface ferruginous or ferrugineo-testaceous. Head convex, coarsely, rather thickly punctate, the frontal carina rounded and rather prominent; antennæ with joint 3 slightly longer than 2, the two together not nearly so long as 4. Prothorax longer than broad, a little narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles strongly, acutely produced, slightly divergent, finely carinate at the sides above, the carina about one-third the length of the prothorax, parallel with the margin, slightly abbreviated behind, and connected near the apex of the angle with a short fine oblique ridge; the surface finely, somewhat thickly punctate, and canaliculate behind. Elytra about two and one-half times the length of the prothorax, narrowing from the middle, rounded at the apex; finely and sharply punctate-striate, the interstices feebly convex and somewhat roughly punctured.

Length 7–9, breadth 2–2$\frac{1}{3}$ millim.

*Hab.* GUATEMALA, Chiacam and Cahabon in Vera Paz (*Champion*).

Four specimens. Allied to *Æ. vermiculatus*, but more elongate and a little larger, the thorax with a much shorter carina and without the marginal stripe; the elytra marked as in the var. $\alpha$ of that species. From *Æ. pulchellus* it may be known by the immaculate sides of the thorax and the transverse (not oblique) patch on the elytra before the middle, the elytra themselves more finely punctate-striate, with the interstices less convex; the supra-marginal carina of the thorax slightly abbreviated behind.

### 30. **Æolus ovipennis.** (Tab. XVI. figg. 24, 24 *a*.)

Moderately elongate, convex, slightly shining, finely pubescent; flavo-rufous, the prothorax with a broad fuscous median vitta, extending nearly to the base and apex and narrowed behind; the scutellum fuscous; the elytra with a broad transverse patch before the middle, becoming oblique inwards and nearly reaching the suture, and a triangular patch beyond the middle, confluent posteriorly with the corresponding mark on the opposite elytron, black; the antennæ and under surface ferruginous, the legs flavo-testaceous. Head thickly, somewhat coarsely punctate, flattened in front, the frontal carina rather prominent and subtruncate; antennæ with joint 3 slightly longer than 2, the two together longer than 4. Prothorax a little longer than broad, gradually narrowing from the middle forwards, the sides parallel behind and feebly rounded in front; the hind angles stout and greatly produced posteriorly, acute, sharply carinate above, the carina distant from the margin, rather short, abbreviated behind, and there almost confluent with a sharp oblique ridge extending inwards from the apex of the angle; the surface thickly, somewhat coarsely punctate. Elytra one and two-thirds the length of the prothorax, convex, oval, narrowed in front and behind, broadly, conjointly rounded at the apex; finely, but very deeply punctate-striate, the interstices convex, roughly punctured and granulate.

Length 5$\frac{1}{2}$, breadth 1$\frac{2}{3}$ millim.

*Hab.* MEXICO, Venta de Peregrino in Guerrero (*H. H. Smith*).

One specimen only of this peculiar species has been received. It somewhat resembles *Æ. pulchellus*, Cand., but differs from that insect in the longer, stouter, and non-divergent hind angles of the thorax, with the carina sharper, distant from the margin, and abbreviated behind; the elytra shorter, almost equally narrowed in front and behind, very obtuse at the apex, with the striæ deeper, and the interstices more convex and more roughly punctured. *Æ. ovipennis* belongs to Candèze's second section of the genus, and is perhaps best placed near *Æ. cibaensis*.

## Group **ELATERINI.**

### DRASTERIUS.

*Drasterius*, Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829) ; Candèze, Monogr. Elat. ii. p. 421.

Of the thirty described species of this genus, thirteen are American. The Central-American representatives call for no special comment ; the first two (with *D. dorsalis*, Say) would be almost equally well placed in *Æolus*.

Elytra maculate.
- Body moderately elongate ; length 5–7 millim. . . . . *livens.*
- Body rather short ; length $4\frac{1}{2}$–5 millim. . . . . *meridionalis.*

Elytra not maculate.
- Legs infuscate ; hind angles of the prothorax divergent . . . . . *simiolus.*
- Legs flavo-testaceous.
  - Hind angles of the prothorax stout, not divergent . . . . . *flavipes.*
  - Hind angles of the prothorax slender, divergent . . . . . *dugesi.*

#### 1. **Drasterius livens.**

*Monocrepidius livens*, Lec. Trans. Am. Phil. Soc. x. p. 484 [1].
*Drasterius livens*, Lec. Trans. Am. Ent. Soc. xii. p. 4 [2].

*Hab.* North America, Vallecitas and Colorado River [1], California [2].—Mexico, Santa Clara in Chihuahua, Chihuahua city, Villa Lerdo in Durango (*Höge*), Saltillo in Coahuila (*Dr. Palmer*), Guanajuato (*Dugès, in coll. Candèze*).

Eight specimens, varying greatly in colour. Some of these closely approach *D. dorsalis*, Say, the punctuation of the thorax being somewhat variable.

#### 2. **Drasterius meridionalis.** (Tab. XVI. figg. 26, 26 *a*.)

Short and rather broad, slightly shining, finely pubescent; the head black or piceous, testaceous in front; the prothorax black or piceous, with the anterior angles and a large subtriangular patch on either side behind—sometimes extending forwards to the apex—testaceous; the scutellum infuscate; the elytra black or piceous, with the base on either side of the scutellum, an elongate mark below the shoulder, an elongate streak on either side of the suture at the middle, a spot on the disc a little lower down, and a spot at the apex, testaceous; the antennæ testaceous, the legs flavous, the under surface rufo-testaceous. Head convex, thickly punctured, the frontal carina rounded and not prominent; antennæ rather short, joints 2 and 3 equal in length, the two together longer than 4. Prothorax scarcely as long as broad, narrowed in front, the sides rounded anteriorly and very feebly sinuate behind; the hind angles broadly, triangularly produced, acute, not divergent, sharply carinate at the sides above, the carina short and joining the marginal one at the tip; the surface thickly, rather coarsely punctate, the punctures equal in size. Scutellum convex. Elytra twice the length of the prothorax, narrowing from the middle, rounded at the apex; very deeply and rather coarsely punctate-striate; the interstices convex, flatter towards the suture, roughly punctured. Beneath coarsely, closely punctate.

Length $4\frac{1}{2}$–5, breadth $1\frac{1}{3}$–$1\frac{3}{5}$ millim.

*Hab.* Mexico, San Juan Bautista in Tabasco (*Höge*); Panama, Bugaba, Volcan de Chiriqui, Caldera (*Champion*), Matachin (*Dr. O. Thième*).

Numerous examples. This insect resembles the North-American *Æolus amabilis* (Lec.); but it is broader and more robust, the thorax is parallel at the sides behind, with the hind angles broadly triangular, and the fourth tarsal joint is very feebly excavate above. The colour is variable, according to the predominance of the light or dark colour; in some specimens the testaceous markings are partly confluent.

### 3. **Drasterius simiolus.**

*Drasterius simiolus*, Cand. Monogr. Elat. ii. p. 428 [1]; Lec. Trans. Am. Ent. Soc. xii. p. 5 [2].

*Hab.* Mexico [1 2], Yautepec in Mexico, Mexico city (*Höge*).

Found in plenty by Herr Höge. The angles of the thorax are sometimes testaceous. The locality "California" is also given by Candèze [1], but it requires confirmation.

### 4. **Drasterius flavipes.**

Moderately elongate, rather broad, somewhat convex, shining; black, the anterior and hind angles of the prothorax and the antennæ testaceous, the legs flavo-testaceous, the under surface pitchy-black; above and beneath clothed with fine yellowish-cinereous pubescence. Head convex, thickly punctured, the frontal carina not prominent; antennæ with joint 3 slightly longer than 2, the two together as long as 4. Prothorax convex, about as long as broad, narrowed in front, the sides rounded anteriorly and very feebly sinuate behind; the hind angles stout, strongly produced, not divergent, sharply carinate above, the carina distant from the margin but joining it at the tip; the surface thickly, rather coarsely punctate. Scutellum convex in front. Elytra twice the length of the prothorax, narrowing from the middle, rounded at the apex; deeply punctate-striate, the punctures distinct; the interstices feebly convex and roughly punctured. Beneath coarsely, rather sparsely punctate.
Length $6\frac{1}{4}$-$6\frac{1}{2}$, breadth 2-$2\frac{1}{4}$ millim.

*Hab.* Mexico, Amula in Guerrero (*H. H. Smith*), Mexico city (*Höge*).

Two specimens, one of which has the elytra abnormally formed. Closely allied to *D. simiolus*, Cand.; but differing from it in having the thorax almost parallel behind, more sparsely punctured, and with the hind angles more sharply carinate, the scutellum more tumid, the elytra more deeply and more coarsely punctate-striate, and the under surface not so closely punctured, the legs and antennæ entirely pallid. From *D. dugesi*, Cand., it may be known by its stouter build, and by the wider, non-divergent, very sharply carinate hind angles of the thorax.

### 5. **Drasterius dugesi.**

*Drasterius dugesi*, Cand. Ann. Soc. Ent. Belg. 1889, p. 99 (Elat. Nouv. iv. p. 33) [1].

*Hab.* Mexico, Guanajuato [1] (*Sallé*).

Allied to *D. simiolus*, but less convex; the hind angles of the thorax and the antennæ are testaceous, the legs flavous. We have received a single specimen of this species, agreeing with the type communicated by Dr. Candèze.

## ELATER.

*Elater*, Linnæus, Syst. Nat. 12th edit. i. 2, p. 651 (1767); Candèze, Monogr. Elat. ii. p. 436.

This well-known genus contains a large number of species in the Palæarctic and Nearctic regions, and is also represented in Australia. One Mexican species was described by Dr. Candèze in 1859, and it is the only one known as yet from within our limits.

### 1. **Elater arctus.** (Tab. XVII. fig. 1, ♂.)

*Elater arctus*, Cand. Monogr. Elat. ii. p. 465 [1].

*Hab.* Mexico, Jacale, Cordillera de Anahuac in Vera Cruz (*Sallé* [1]).

Three specimens of this species are contained in the Sallé collection. The relatively very short thorax gives it a peculiar facies.

## MEGAPENTHES.

*Megapenthes*, Kiesenwetter, Naturg. Ins. Deutschl. iv. 2, p. 353 (1858); Candèze, Monogr. Elat. ii. p. 491 (part.); Cat. Méthod. Elat. p. 95.

Dr. Candèze in his catalogue enumerates eighty-seven species of this genus, seventeen of which are American. Fifteen are now recorded from within our limits, all but two of which appear to be new. Of several of these single (female) examples only have been obtained. The species here added agree in the following characters:—front convex, margined, distinctly separated from the anterior margin of the head; prosternal sutures not channelled in front; posterior coxal plates abruptly and angularly widened (in some species very broadly) inwards, or (as in *M. fusiformis*) feebly widened inwards and extending rather broadly to the lateral margin of the body; tarsi simple, the middle and hind pairs very long and slender in some of the species. *M. fusiformis* will probably have to be separated from the genus eventually, as it lacks one of the essential characters of the group Elaterini.

Coxal plates angularly widened inwards, becoming narrower outwards.
- Antennæ with the third joint as long as the fourth; hind angles of the prothorax bicarinate . . . . . Species 1–3.

Antennæ with the third joint not or very little longer than the second.
- Hind angles of the prothorax bicarinate . . . . . Species 4–7.
- Hind angles of the prothorax unicarinate . . . . . Species 8–14.

Coxal plates rather broad throughout, feebly widened inwards; antennæ with the third joint very short; hind angles of the prothorax unicarinate . . Species 15.

### 1. **Megapenthes furvus.**

Elongate, narrow, subparallel, rather convex, shining, thickly pubescent; black or brownish-black, the head in front and the anterior margin and hind angles of the prothorax ferruginous or obscure ferruginous,

the elytra brown or pitchy-brown, with the epipleuræ obscure ferruginous; beneath piceous or obscure reddish-brown; the antennæ ferruginous, the legs testaceous. Head convex, thickly punctured; antennæ (♀) short, scarcely reaching the hind angles of the prothorax, rather slender, joints 3 and 4 equal, 3 more than twice as long as 2. Prothorax a little longer than broad, very gradually narrowing from the base forwards, the sides feebly rounded in front; the hind angles long and acute, divergent, bicarinate; the surface thickly and finely punctate, with the interspaces smooth and shining, more or less distinctly canaliculate behind. Elytra moderately long, subparallel to the middle, and narrowing thence to the apex, the apices separately rounded; rather deeply punctate-striate, the interstices feebly convex and thickly punctured, subgranulate towards the base. Beneath thickly punctate; posterior coxal plates moderately and angularly widened opposite the point of insertion of the femora.

Length 7–8½, breadth 1⅔–2 millim. (♀.)

*Hab.* Mexico, Cordova (*Sallé*); Nicaragua, Chontales (*E. M. Janson*).

Three examples, apparently all females. This species resembles *M. cincticollis* in general shape, but differs from it in having the third joint of the antennæ as large as the fourth; the hind angles of the thorax ferruginous, divergent, and with the outer carina longer and well defined; the elytral interstices more sparsely punctate. More parallel than *M. bicarinatus*, the third joint of the antennæ longer, the thorax more finely punctured. *M. furvus* also approaches the European *M. tibialis*, Lac.

## 2. **Megapenthes brasilianus.** (Tab. XVII. figg. 2, ♂; 2 *a*, antenna.)

*Megapenthes brasilianus*, Cand. Elat. Nouv. iii. p. 66 (1881) [1].

Elongate, rather convex, shining, pubescent; testaceous or ferrugineo-testaceous, the head (the labrum excepted), the tips of the hind angles of the prothorax, the scutellum, the suture of the elytra partly or entirely, and the body beneath (the propleuræ excepted), black or piceous; the antennæ and legs testaceous. Head moderately convex, thickly, somewhat coarsely punctate; antennæ short, about reaching the hind angles of the prothorax in the male, a little shorter in the female, joint 3 as stout as, and slightly longer than, 4. Prothorax convex, longer than broad, narrowing from the base forwards, subconical in the male, a little rounded at the sides in the female; the hind angles strongly produced, divergent, bicarinate; the surface thickly, moderately finely punctate, with the interspaces smooth and shining, shallowly canaliculate behind. Elytra moderately elongate, rapidly narrowing from the base, separately rounded at the apex; deeply punctate-striate, the interstices slightly convex and somewhat thickly punctured. Beneath thickly punctured; posterior coxal plates angularly and moderately widened opposite the point of insertion of the femora.

Length 7½–11, breadth 2–2⅔ millim. (♂ ♀.)

*Hab.* Nicaragua, Chontales (*Janson*); Panama, Bugaba (*Champion*).—Brazil, Rio Janeiro and Bahia [1].

Five specimens, the males agreeing perfectly with the type, kindly communicated by Dr. Candèze. In all of them the suture of the elytra is narrowly infuscate, a character not mentioned in his description. The basal margin of the elytra is sometimes black, as well as the scutellum and the tips of the hind angles of the thorax.

## 3. **Megapenthes rubigineus.**

Elongate, rather convex, shining, pubescent; ferruginous or brownish-ferruginous, the antennæ black, the two basal joints sometimes obscure ferruginous, the legs piceous or black, with the knees and tarsi ferruginous; beneath rufous or obscure rufous, the abdomen sometimes infuscate at the sides and apex.

Head convex, thickly and somewhat coarsely punctate; antennæ short, in the male about reaching the hind angles of the prothorax, a little shorter in the female, the joints from the third considerably widened in the male, 3 more than twice the length of 2, and slightly longer than 4. Prothorax convex, longer than broad, narrowing from the base forwards, the sides rounded in front; the hind angles acute, directed a little outwards, bicarinate; the surface thickly, moderately finely punctate, with the interspaces smooth and shining, canaliculate behind. Elytra elongate, narrowing from a little below the base, separately rounded at the apex; deeply punctate-striate, the interstices slightly convex and somewhat thickly, finely punctate. Beneath rather sparsely and finely punctured; posterior coxal plates angularly and moderately widened opposite the point of insertion of the femora.

Length $7\frac{1}{2}$–10, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).

Eight specimens. Allied to *M. brasilianus*, Cand., but rather narrower; the elytra more gradually narrowing from the base, the antennæ black, the upper surface uniformly ferruginous, the femora and tibiæ piceous or black, the prosternum rufous, the under surface more sparsely punctured, the head more convex, &c. The antennæ, as in *M. brasilianus*, are short in both sexes. Dr. Candèze has examined one of the specimens and he informs me that the insect is unknown to him.

### 4. **Megapenthes cinnamomeus.**

Elongate, rather shining, pubescent; reddish-brown, the prothorax piceous or brown, with the base and hind angles ferrugineo-testaceous, the antennæ and legs testaceous. Head moderately convex, closely punctured; antennæ (♂) rather slender, nearly half the length of the body, joint 3 short, slightly longer than 2, the two together not longer than 4. Prothorax feebly convex, longer than broad, rapidly and obliquely narrowing from the base forwards, a little rounded at the sides in front; the hind angles long, strongly divergent, acute, finely bicarinate; the surface thickly punctured. Elytra moderately long, narrowing from about the middle, feebly truncate at the apex, the sutural angle sharp; punctate-striate, the interstices flat or feebly convex, thickly punctured and subgranulate. Beneath thickly punctured; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length $8\frac{1}{4}$–9, breadth 2–$2\frac{1}{4}$ millim. (♂.)

*Hab.* GUATEMALA, Sinanja in Vera Paz and Capetillo (*Champion*).

Two male examples, differing a little *inter se* in the strength of the elytral sculpture. This species is closely allied to the Cuban *M. opaculus*, Cand., from which it may be known by the different form of the antennæ (in *M. opaculus* the third and fourth joints are equal, and the organs themselves in the male are much longer and stouter), the much more finely punctured thorax, the more sparsely punctured elytral interstices, &c. The long antennæ in the male, with short third joint, the more divergent hind angles of the thorax, &c., distinguish *M. cinnamomeus* from *M. brasilianus* and *M. rubigineus*. The outer carina of the thorax is very fine, but distinct.

### 5. **Megapenthes cincticollis.** (Tab. XVII. fig. 4, ♀.)

Elongate, narrow, subparallel, rather convex, shining, thickly pubescent; the head (the labrum excepted) black, the prothorax black, with the base broadly (except at the sides) and the anterior angles flavo-testaceous, the elytra pitchy-brown; the under surface piceous, the propleuræ and prosternum partly testaceous; the antennæ testaceous, the legs flavous. Head convex, sparsely punctate; antennæ (♀) short, not extending beyond the hind angles of the prothorax, rather slender, joint 3 a little longer than 2, the two together

slightly longer than 4. Prothorax longer than broad, convex, subparallel, the sides a little rounded and converging in front; the hind angles acute, feebly bicarinate, not divergent; the surface rather sparsely, finely punctate, with the interspaces smooth and shining, canaliculate behind. Elytra moderately elongate, of the same width as the prothorax, subparallel to about the middle and narrowing thence to the apex, the apices conjointly rounded; finely and shallowly punctate-striate, the interstices flat, roughly punctured, and subgranulate. Beneath thickly punctured, the prosternum and propleuræ sparsely punctate; posterior coxal plates very broadly and angularly widened opposite the point of insertion of the femora.

Length $6\frac{3}{4}$–$7\frac{1}{4}$, breadth $1\frac{2}{3}$–$1\frac{7}{8}$ millim. (♀.)

*Hab.* Mexico, Jalapa (*Höge*).

Two specimens, both females. Closely allied to the North-American *M. rufilabris* (Germ.), but with relatively longer elytra, which are not marked with yellow at the base. The general shape is more elongate. The thorax is broadly flavo-testaceous at the base; the outer carina is so faint as to be scarcely distinguishable. The insect is unknown to Dr. Candèze.

### 6. **Megapenthes bicarinatus.**

Moderately elongate, feebly convex, rather dull, pubescent; ferruginous, the head infuscate in the middle behind, the prothorax with the disc in great part infuscate and the base and hind angles broadly testaceous, the elytra testaceous, with the base on either side of the scutellum more dilute in colour, the legs and antennæ testaceous. Head convex, closely punctured; antennæ (♀) short, reaching slightly beyond the hind angles of the prothorax, slender, joint 3 a little longer than 2, the two together scarcely longer than 4. Prothorax rather longer than broad, very gradually narrowing from the base forwards, the sides rounded in front; the hind angles acute and slightly divergent, finely bicarinate; the surface closely and rather coarsely punctured, with the narrow interspaces dull. Elytra moderately long, narrowing almost from the base, rounded at the apex; punctate-striate, the interstices flat and somewhat roughly punctured, subgranulate towards the base. Beneath thickly punctured; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length $7\frac{1}{2}$, breadth 2 millim. (♀.)

*Hab.* Guatemala, Mirandilla (*Champion*).

One female example. Larger and broader than the corresponding sex of *M. sobrinus*, the thorax more parallel behind and with the hind angles distinctly bicarinate. This insect closely resembles an *Agriotes*, but the head and coxal plates are formed as in *Megapenthes*.

### 7. **Megapenthes mexicanus.**

Moderately elongate, feebly convex, shining, pubescent; ferruginous or reddish-brown, the prothorax with the base broadly, the apical margin, and sometimes a median line testaceous or ferrugineo-testaceous, the antennæ ferruginous, the legs testaceous. Head moderately convex, thickly punctured; antennæ (♀) short, scarcely extending beyond the hind angles of the prothorax, joint 3 a little longer than 2, the two together about as long as 4. Prothorax rather longer than broad, gradually narrowing from the base forwards, the sides rounded in front; the hind angles acute and slightly divergent, finely bicarinate; the surface thickly punctured, with the interspaces smooth and shining. Elytra moderately long, narrowing from about the middle, rounded at the apex; punctate-striate, the interstices feebly convex and somewhat roughly punctured, subgranulate towards the base. Beneath thickly punctured; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length $6\frac{1}{2}$–$7\frac{1}{4}$, breadth $1\frac{7}{8}$ millim. (♀.)

*Hab.* MEXICO, Jalapa (*Höge*), Yucatan (*Pilate, in coll. Janson*).

Two female specimens. The Yucatan example, which is in a mutilated condition, differs from the one from Jalapa in its ferruginous colour, and in having the elytral interstices more distinctly granulate; it is labelled *Steatoderus rufus*, Pilate. *M. mexicanus* is a near ally of *M. bicarinatus*, but may be known from it by the less coarsely punctured thorax, the interspaces between the punctures smooth and shining, the elytra more parallel, more shining, and with coarser sculpture. This is one of several closely allied species of which very few examples are available for examination.

## 8. **Megapenthes sobrinus.**

Moderately elongate, feebly convex, rather dull, pubescent; the head obscure ferruginous, the prothorax piceous or pitchy-brown, with the base and hind angles broadly flavo-testaceous and the apex ferruginous, the elytra brown, with the base on either side of the scutellum more dilute in colour; the under surface ferruginous; the legs and antennæ testaceous. Head moderately convex, closely, somewhat coarsely punctate; antennæ rather slender, in the male about half the length of the body, in the female only reaching the hind angles of the prothorax, joint 3 a little longer than 2, the two together not longer than 4. Prothorax longer than broad, narrowing from the base forwards in both sexes; the hind angles acute, divergent, finely unicarinate; the surface closely and rather coarsely punctured, with the narrow interspaces dull, obsoletely canaliculate behind. Elytra moderately long, gradually narrowing from the base, rounded at the apex; deeply and somewhat coarsely punctate-striate, the interstices slightly convex, thickly punctate, and subgranulate. Beneath thickly punctured; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length 6–6⅔, breadth 1½–1⅔ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Two males and one female. This insect somewhat resembles *M. opaculus*, Cand., from Cuba; but it is much smaller and less elongate, the third joint of the antennæ is very little longer than the second (it is as long as the fourth in *M. opaculus*), &c. The insect is unknown to Dr. Candèze.

## 9. **Megapenthes asperatus.**

Moderately elongate, feebly convex, dull, thickly pubescent; the head black, ferruginous in front, the prothorax black, with the base broadly and the apex narrowly testaceous, the elytra pitchy-brown; the under surface in great part piceous; the antennæ ferruginous, the legs testaceous. Head convex, closely, rather coarsely punctate; antennæ (♀) short, about reaching the hind angles of the prothorax, joint 3 a little longer than 2, the two together scarcely longer than 4. Prothorax longer than broad, very gradually narrowing from a little before the base to the apex, the sides slightly rounded in front; the hind angles acute, not divergent, unicarinate; the surface closely impressed with very shallow, umbilicate punctures, the narrow interspaces opaque, feebly canaliculate behind. Elytra moderately long, gradually narrowing from about the basal third, conjointly rounded at the apex; deeply and rather finely punctate-striate, the interstices feebly convex, roughly punctured and subgranulate. Beneath closely punctured; posterior coxal plates strongly and angularly widened opposite the point of insertion of the femora.

Length 6½, breadth 1¾ millim. (♀.)

*Hab.* GUATEMALA, Teleman in Vera Paz (*Champion*).

One female example. Closely allied to *M. sobrinus*, from the same sex of which

it may be known by its opaque and more closely punctured thorax, the hind angles of which are not divergent, and the more granulate elytral interstices. As in *M. sobrinus*, there is an indication of a faint outer carina within the hind angles of the thorax. *M. asperatus* has much the facies of a small *Ludius*.

### 10. **Megapenthes longitarsis.**

Elongate, rather narrow, feebly convex, subopaque, thickly pubescent; black or brownish-black, the head in front, and the prothorax with the base and the anterior and hind angles testaceous or ferruginous, the scutellum ferruginous or pitchy-brown, the elytra pitchy-brown or obscure reddish-brown; the under surface in great part piceous; the antennæ fusco-ferruginous, the legs testaceous. Head convex, thickly, finely punctate; antennæ slender, in the male about half the length of the body, in the female extending very little beyond the hind angles of the prothorax, joint 3 short, slightly longer than 2, the two together not longer than 4. Prothorax much longer than broad, moderately convex, very gradually narrowing from the base forwards, the sides a little rounded in front; the hind angles acute, slightly divergent, sharply unicarinate; the surface very finely, rather sparsely punctate, with the interspaces minutely reticulate and dull, obsoletely canaliculate behind. Elytra elongate, of the same width as the prothorax at the base, and gradually narrowing thence to the apex, the sides a little rounded, the apices obtuse; finely and shallowly punctate-striate, the interstices almost flat, thickly punctured and subgranulate. Beneath thickly punctured, the prosternum and propleuræ more sparsely punctate; posterior coxal plates very broadly and angularly widened opposite the point of insertion of the femora. Legs elongate, slender, the four hinder tarsi distinctly longer than the tibiæ in the male.

Length $7\frac{1}{4}$–$10\frac{1}{2}$, breadth $1\frac{3}{4}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Guatemala, Capetillo (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

Found in numbers by myself at Capetillo. This insect varies a good deal in size and colour. The thorax has the base and a large triangular patch on either side within the hind angles testaceous, and sometimes there is a short median line of the same colour behind. The elytra in one example are brownish-testaceous, with the sides and suture darker. Some of the males are smaller, narrower, and more parallel than others. *M. longitarsis* may chiefly be known from the allied forms by its elongate shape and long legs. The insect is unknown to Dr. Candèze.

### 11. **Megapenthes melanotoides.** (Tab. XVII. figg. 3, ♀; 3 *a*, antenna; 3 *b*, coxal plate.)

Very elongate, rather narrow, shining, sparsely pubescent; the head black, ferruginous in front, the prothorax piceous, with the anterior angles, the base, and a short median line behind ferrugineo-testaceous, the elytra obscure reddish-brown, with the epipleuræ ferruginous; the under surface in great part piceous; the antennæ obscure ferruginous, the legs testaceous. Head convex, thickly punctured; antennæ (♀) slender, extending to a little beyond the hind angles of the prothorax, joint 3 short, slightly longer than 2, the two together not so long as 4. Prothorax much longer than broad, very gradually narrowing from the base forwards, the sides a little rounded in front; the hind angles acute, slightly divergent, sharply unicarinate; the surface thickly, finely punctate, the punctures becoming still finer and more scattered on the disc, the interspaces shining, distinctly canaliculate behind. Elytra slightly narrower than the prothorax at the base, very elongate, gradually narrowing from the base, rounded at the apex; finely and lightly punctate-striate, the interstices almost flat, thickly punctured, and subgranulate.

Beneath thickly punctured; posterior coxal plates very broadly and angularly widened opposite the point of insertion of the femora.

Length $12\frac{1}{2}$, breadth $2\frac{3}{4}$ millim. (♀.)

*Hab.* GUATEMALA, Cerro Zunil (*Champion*).

One female specimen. This species is perhaps nearest allied to *M. longitarsis*, but it has the elytra much more elongate, with the sides straighter and more gradually narrowed from the base, the upper surface more shining, the interspaces on the thorax not opaque, &c.

### 12. **Megapenthes badius.** (Tab. XVII. fig. 5, ♀.)

Elongate, moderately convex, shining, thickly pubescent; brown, the head infuscate behind, the prothorax with the base broadly, the apex narrowly, and a narrow median line indeterminately flavo-testaceous; the under surface ferruginous; the abdomen infuscate; the antennæ and legs testaceous. Head moderately convex, thickly punctured; antennæ (♀) rather slender, extending to a little beyond the hind angles of the prothorax, joint 3 slightly longer than 2, the two together about as long as 4. Prothorax longer than broad, subparallel behind, the sides a little rounded and converging from about the middle forwards; the hind angles greatly produced, not divergent, unicarinate; the surface thickly, finely punctate, with the interspaces smooth and shining, canaliculate from the middle to the base. Elytra moderately elongate, considerably narrower than the prothorax at the base, subparallel in front, widest a little before the middle, and rapidly narrowing thence to the apex, the apices rounded; finely but rather deeply punctate-striate, the interstices feebly convex, thickly punctured, and subgranulate. Beneath somewhat closely punctate; posterior coxal plates broadly and angularly widened opposite the point of insertion of the femora.

Length $8\frac{1}{3}$, breadth 2 millim. (♀.)

*Hab.* GUATEMALA, Panajachel 5000 feet (*Champion*).

One female specimen. This species is not very closely allied to any of the other Central-American forms described here. It has the thorax considerably wider at the base than the elytra, with the hind angles not divergent and unicarinate, the elytra narrowing from about the middle to the apex and also slightly narrowed anteriorly. From *M. melanotoides* it may be known by the much shorter elytra, which are more rounded at the sides.

### 13. **Megapenthes conicicollis.**

Very elongate, moderately convex, shining, pubescent; obscure reddish-brown, the hind angles of the prothorax and the elytra reddish-brown, the antennæ and legs testaceous. Head moderately convex, closely punctured; antennæ slender, extending to a little beyond the base of the elytra, joint 3 slightly longer than 2, the two together not longer than 4. Prothorax a little longer than broad, subconical, rapidly narrowing from the base forwards, distinctly sinuate on either side before the middle; the hind angles stout, divergent, unicarinate; the surface thickly, finely punctate, the punctures finer and more scattered on the disc, with the interspaces smooth and shining, canaliculate behind. Elytra elongate, subparallel to the middle, and narrowing thence to the apex, the apices subtruncate, with the sutural angle rather sharp; punctate-striate, the interstices feebly convex and rather sparsely, finely punctate, subgranulate towards the base. Beneath thickly punctured; posterior coxal plates very broadly and angularly widened opposite the point of insertion of the femora.

Length 13, breadth 3 millim. (♀?)

*Hab.* MEXICO, Chiapas (*Sallé*).

One mutilated example only, without abdomen, has been received of this species; it is very distinct from any of the other *Megapenthes* here described, and it seems advisable to name it. In the form of the thorax it approaches the Cuban *M. tæniatus*, Cand. Much larger, longer, and more shining than *M. cinnamomeus*; the thorax more rapidly narrowing from the base, without trace of an outer carina within the hind angles, and less closely punctured, the marginal carina in great part visible from above; the elytral interstices smoother. The insect cannot be identified with the description of *M. athoides*.

### 14. **Megapenthes athoides.**

*Megapenthes athoides*, Cand. Monogr. Elat. ii. p. 499[1].

"Fusco-niger, nitidus, breviter fulvo-pubescens; prothorace a basi sensim angustato, sparsim punctato, postice canaliculato, margine postica angulisque posticis acutis, carinatis, divaricatis, rufescentibus; elytris punctato-striatis, interstitiis granulatis, brunneo-testaceis.—Long. 10, lat. 2 millim."

*Hab.* Mexico[1].

The hind angles of the thorax are stated[1] to be strongly unicarinate, the thorax itself very gradually narrowing from the base forwards and sparsely punctured; the antennæ in the male long and thin. We have not received a *Megapenthes* answering to this definition. The type is not contained in the collection of the late E. W. Janson nor in that of Dr. Candèze.

### 15. **Megapenthes fusiformis.** (Tab. XVII. figg. 6, ♂; 6 *a*, antenna; 6 *b*, coxal plate; 6 *c*, genitalia.)

Moderately elongate, convex, subfusiform, shining, finely and rather sparsely pubescent; varying in colour from flavo-rufous to brown or reddish-brown, the head and prothorax (the hind angles excepted) often infuscate; the antennæ piceous or brown, with the three basal joints paler; the legs testaceous; the under surface piceous or pitchy-red, the prosternum and propleuræ rufous or flavo-rufous. Head moderately convex, thickly punctured; antennæ short, extending to a little beyond the hind angles of the prothorax in the male, still shorter in the female, rather slender, joints 2 and 3 very short, equal, 4 longer than 2 and 3 united. Prothorax convex, slightly longer than broad, narrowing from the base forwards, the sides rounded anteriorly; the hind angles acute, divergent, sharply and obliquely unicarinate; the surface very finely, rather sparsely punctate, with the interspaces smooth and shining, obsoletely canaliculate behind. Elytra moderately long, convex, narrowing from the base, the sides a little rounded, the apices obtuse; finely punctate-striate, the interstices feebly convex and sparsely, very finely punctate. Beneath sparsely, very finely punctate; posterior coxal plates moderately broad throughout, becoming slightly wider inwards, but without distinct dilatation opposite the point of insertion of the femora. Legs slender.

Length $6\frac{2}{3}$–$8\frac{1}{4}$, breadth $1\frac{2}{3}$–$2\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

Numerous examples of both sexes. In the form of the coxal plates this species differs from all the allied forms, and it should perhaps be treated as generically distinct from *Megapenthes*. *M. fusiformis* resembles *M. rubigineus*, but it is less elongate, more convex, and more fusiform. The third joint of the antennæ is very small, not larger than the second.

The coxal plates extend rather broadly to the outer margin of the body, and are very little widened inwards. Dr. Candèze is of opinion that the insect cannot be satisfactorily separated from *Megapenthes*.

## Group **PHYSORHINI.**

### PHYSORHINUS.

*Physorhinus*, Eschscholtz, in Silberm. Rev. Ent. iv. table (1836); Candèze, Monogr. Elat. ii. p. 387, t. 3. fig. 7.

Of the fourteen described *Physorhini* (two of which are here treated as varieties of *P. distigma*), five inhabit Central America *, whence three others are now added; *Anchastus frontalis*, Horn †, from New Mexico, also belongs to it. *Physorhinus* is confined to the New World, and it is one of the most characteristic genera of Elateridæ in Tropical America. It has the posterior coxal plates enormously developed, the subtriangularly dilated median portion being nearly or quite as wide as the first ventral segment. The sutures between the prosternum and propleuræ are widely separated for the greater part of their length, rather abruptly converging behind, and channelled in front. The middle coxæ are deeply excavate externally for the reception of the base of the middle femora, the upper portion forming a broad plate. The third joint of the antennæ is very short. The third joint of the tarsi is strongly lamellate, the fourth joint small. The curious pallid coloration of the whole or part of the head is common to all the species, many of which have spotted elytra. The maculation of the elytra shows very little sign of variation, except in *P. erythrocephalus* and *P. distigma*; the latter is a common Central-American species, and also varies enormously in size.

These insects are chiefly found in forest-clearings, by beating the branches of fallen trees.

The Central-American species may be identified by the annexed table:—

*a*. Hind angles of the prothorax bicarinate.
  *a'*. Apical margins of the elytra denticulate.
    *a''*. Elytra obsoletely striate.
      *a'''*. Elytra each with two large flavous spots on the disc—one before, the other beyond the middle . . . . . *erythrocephalus*.
      *b'''*. Elytra each with a flavous or reddish spot or streak towards the apex, sometimes extending forwards along the outer part of the disc to the base, and sometimes obsolete . . . . . *distigma*.

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* *Physorhinus galapagoensis*, Cand. (nec Waterh.), presumably from the Galapagos Islands, is stated by Candèze (Monogr. Elat. ii. p. 395) to occur on the corresponding coast of Colombia and also in Guatemala. Further evidence is required before it can be admitted into our list. The insect in question, if the specimen in the British Museum is correctly named (which I believe to be the case, as it agrees with the description), cannot possibly be retained in *Physorhinus*, it having the sutures between the prosternum and propleuræ formed as in *Anchastus*, i. e. narrowly separated throughout.

† The name *frontalis* being preoccupied in the genus, it is here changed, at the author's request, to *fusculus*.

*b''*. Elytra with a sutural stria only, the others obliterated; each elytron with two flavous spots—one, small, marginal, before the middle, the other, larger, towards the apex . . . . . *quadrinotatus*.

*b'*. Apical margins of the elytra feebly serrate or subcrenulate.

*c''*. Elytra obsoletely striate; brownish-testaceous, with the suture and a transverse median fascia infuscate . . . . . *cruciatus*.

*d''*. Elytra distinctly striate.

*c'''*. Elytra elongate, usually brownish-testaceous or rufo-castaneous . *sturmi*.

*d'''*. Elytra moderately elongate, pitchy-brown . . . . . *frontalis*.

*b*. Hind angles of the prothorax unicarinate; apical margins of the elytra denticulate.

*e''*. Elytra obsoletely striate, brownish-testaceous; antennæ very elongate, rather slender . . . . . *longicornis*.

*f''*. Elytra with a sutural stria only, the others obsolete, dark reddish-brown, each with three yellow spots; antennæ moderately elongate, rather stout . . . . . *stellatus*.

## 1. **Physorhinus erythrocephalus.**

*Elater erythrocephalus*, Fabr. Syst. Eleuth. ii. p. 241 [1].

*Physorhinus erythrocephalus*, Cand. Monogr. Elat. ii. p. 389 [2].

*Elater flaviceps*, Perty, Del. Anim. Artic. Bras. p. 21, t. 5. fig. 2 [3].

*Physorhinus flaviceps*, Blanch. in d'Orbigny's Voyage dans l'Amér. Mérid., Ins. p. 136, t. 8. fig. 7 [4].

*Hab.* Panama, Bugaba (*Champion*).—South America [1 2], Colombia, Venezuela [2], Guiana, Brazil [3], Amazons, Bolivia [4].

Five specimens of this well-known Tropical-American species were captured by myself at Bugaba.

## 2. **Physorhinus distigma.** (Tab. XVII. figg. 7, ♀; 8, var. *cephalicus*, ♂; 9, var. β, ♂.)

*Physorhinus distigma*, Cand. Monogr. Elat. ii. p. 390 [1].

*Hab.* Mexico [1], Cordova (*Sallé*), Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, Teleman and Purula in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).—Colombia [1]; Brazil.

Var. *α*. The flavous or reddish spot on the disc of each elytron towards the apex more elongate, in some specimens extending forwards to the middle. (Fig. 8.)

*Physorhinus cephalicus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 97 (Elat. Nouv. iv. p. 31) [2].

*Hab.* Mexico [2], Cerro de Plumas, Tapachula (*Höge*), Teapa in Tabasco (*H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Guatemala, Teleman, La Tinta, San Juan, Senahu, Chacoj, Tamahu, Panima, Purula, and San Gerónimo in Vera Paz, El Tumbador, El Reposo, Las Mercedes, Pantaleon, Zapote (*Champion*), Coban (*Conradt*); Nicaragua, Chontales (*Belt*, *Janson*).

Var. $\beta$. The elytra each with a reddish stripe on the outer part of the disc extending from the base to the apex and widening posteriorly. (Fig. 9.)

*Hab.* GUATEMALA, Zapote (*Champion*).

Var. $\gamma$. The elytral markings entirely obliterated.

*Physorhinus sericeus,* Cand. Monogr. Elat. ii. p. 392 [3].

*Hab.* MEXICO, Cordova (*Sallé* [3]), Cerro de Plumas, Jalapa (*Höge*); GUATEMALA, El Reposo (*Champion*).

I have examined the types of the three insects described by Candèze, and there can be no doubt, judging from our very long series of specimens, that they are extreme forms of one variable species. As he remarks [1], *P. distigma* chiefly differs from *P. erythrocephalus* in the obliteration of the large flavous ante-median spot on the disc of each elytron. *P. cephalicus* is the commonest form in Central America. Of the variety $\beta$ three specimens were obtained at Zapote. Of *P. sericeus*, the type of which has the elytra somewhat abnormally formed, so as to appear flattened, eight examples are before me; it occurred at El Reposo with *P. cephalicus* and intermediate forms. The variation in size is very great—from $8\frac{1}{4}$–15 millim. in length, and from $2\frac{1}{4}$–$4\frac{1}{2}$ millim. in breadth. Upwards of one hundred examples have been examined, showing great variation in the form of the elytral spots; the largest of these specimens are from Belize and Coban, the smallest from Chacoj in the Polochic valley. The insect chiefly inhabits the "tierra caliente." It is equally common on the Atlantic and Pacific slopes of Guatemala. We figure a female of the typical form, from Bugaba; a large male of the var. *cephalicus*, from Belize; and a male of the var. $\beta$, from Zapote.

3. **Physorhinus quadrinotatus.** (Tab. XVII. figg. 10, ♂; 10 *a*, hind angles of prothorax; 10 *b*, genitalia.)

Elongate, somewhat fusiform, rather convex, shining, thickly clothed with long, coarse, fulvous pubescence; blackish-brown or obscure reddish-brown, with the head, a spot on the margin of the elytra a little below the base, and another—larger and rounded—spot on the outer part of the disc at about one-third from the apex, yellow or orange-yellow, the hind angles of the prothorax and the basal and apical margins of the elytra sometimes rusty-red; the antennæ ferruginous, the legs brownish-testaceous. Head thickly, finely punctate; antennæ rather stout; and extending to about the basal fifth of the elytra in the male, a little shorter in the female, joint 3 very short, slightly longer than 2. Prothorax broader than long, rapidly narrowing from the middle forwards, the sides parallel at the base; the hind angles acutely produced, sharply bicarinate, the inner carina oblique, the outer one straight and close to the margin; the surface finely and rather closely punctate. Elytra moderately elongate, rapidly narrowing from a little below the base, the sides slightly rounded, the apical margins feebly denticulate; finely and somewhat thickly punctate, the sutural stria only distinct, the others obsolete. Beneath thickly punctured; the median dilated portion of the posterior coxal plates sharply angulate behind.

Length $9\frac{1}{2}$–12, breadth $2\frac{1}{2}$–$3\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Seven examples. This insect is closely allied to *P. erythrocephalus*, but differs from

it in having the anterior spot on the elytra small and placed close to the lateral margin, the elytra themselves more rapidly narrowing from the base and with the striæ (the sutural one excepted) obsolete, and the median dilated portion of the coxal plates more acutely produced. The allied *P. stellatus* differs from *P. quadrinotatus* in having a small additional spot on the disc of each elytron near the base and the outer thoracic carina obliterated. *P. bolivianus*, Cand., and *P. sexnotatus*, Steinh., are allied South-American forms. The insect is unknown to Dr. Candèze.

### 4. **Physorhinus cruciatus.** (Tab. XVII. fig. 11.)

Elongate, rather convex, shining, thickly clothed with long fine yellowish pubescence; pitchy-brown, the head flavous, the elytra brownish-testaceous, with the suture and a transverse median fascia rather narrowly and indeterminately pitchy-brown, the abdomen in part and the antennæ reddish-brown, the legs brownish-testaceous. Head thickly punctured; antennæ extending to about the basal fifth of the elytra, joint 3 very short, slightly longer than 2. Prothorax about as long as broad, convex, gradually and arcuately narrowing from near the base, the sides parallel behind; the hind angles acute, bicarinate, the inner carina oblique, the outer one straight; the surface closely, finely punctate. Elytra elongate, narrowing from about the basal third, the apical margins feebly serrate; thickly, finely punctate and obsoletely striate, the striæ becoming obliterated towards the base, the sutural stria sharply defined. Beneath closely punctured; the median dilated portion of the posterior coxal plates obtusely angulate behind.

Length 13, breadth $3\frac{1}{2}$ millim.

*Hab.* Mexico, Tapachula in Chiapas (*Höge*).

One example, probably a male. This insect approaches *P. erythrocephalus*; but it is more parallel, the thorax is much less narrowed in front, the elytra are more finely and more closely punctured, with the apical margins feebly serrate, and the pubescence of the upper surface is not so coarse. The elytra are brownish-testaceous, with the suture and a transverse median fascia rather narrowly infuscate.

### 5. **Physorhinus sturmi.**

*Physorhinus sturmii*, Germ. Zeitschr. für Ent. ii. p. 439 [1]; Cand. Monogr. Elat. ii. p. 393 [2].

*Hab.* Mexico [1 2] (*Sallé, ex coll. Sturm*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Toluca and Parada (*Sallé*), ? Jalapa (*Höge*).

The elytra in this species are rufo-castaneous, with the suture usually piceous; in some specimens, however, the dark colour extends to the greater part of the surface. The margins of the elytra are very feebly crenulate at the apex.

Thirteen examples have been examined.

### 6. **Physorhinus frontalis.**

*Physorhinus frontalis*, Cand. Monogr. Elat. ii. p. 394 (nec Horn) [1].

*Hab.* Mexico, Presidio (*Forrer*), Yucatan [1] (*Gaumer*).

I have seen ten examples of this species, varying considerably in size. It closely

resembles *P. distigma*, var. *sericeus*, but is a little less elongate, the thorax is more closely punctured, and the elytra are more parallel, with the margins feebly serrate at the apex.

### 7. **Physorhinus longicornis.** (Tab. XVII. figg. 12, ♂; 12 *a*, antenna.)

Elongate, somewhat fusiform, moderately convex, shining, thickly clothed with fine yellowish pubescence; black, the head pale flavous, the elytra, except at the base in some specimens, brownish-testaceous, the abdomen rufo-testaceous, the antennæ and legs piceous, the femora sometimes obscure testaceous. Head thickly punctured; antennæ rather slender, extending to beyond the middle of the elytra in the male, a little shorter in the female, joint 3 slightly longer than 2, the two together very much shorter than 4. Prothorax transverse, rapidly and obliquely narrowing from a little before the base to the apex, the sides parallel behind; the hind angles acute, obliquely unicarinate; the surface thickly, finely punctate. Elytra moderately elongate, rapidly narrowing from the base, the apical margins finely denticulate; somewhat thickly, finely punctate and obsoletely striate, the sutural stria fine but distinct. Beneath thickly punctured; the median dilated portion of the posterior coxal plates sharply angulate behind.

Length 9½–11, breadth 2½–3 millim. (♂ ♀.)

*Hab.* Gutemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

Five specimens, from the vicinity of the coffee-plantation of Las Nubes, on the Pacific slope. *P. longicornis* differs from all the described species of the genus in its elongate, comparatively slender antennæ, these organs extending to beyond the middle of the elytra in the male sex. It resembles *P. sturmi* in colour, but differs from that insect in the unicarinate hind angles of the thorax, the less parallel elytra, the apical margins of which are denticulate, &c.

### 8. **Physorhinus stellatus.** (Tab. XVII. figg. 13, ♀; 13 *a*, hind angles of prothorax.)

*Physorhinus stellatus*, Cand. Monogr. Elat. ii. p. 391, t. 3. fig. 6[1].

*Hab.* Panama, Volcan de Chiriqui (*Champion*).—Colombia [1].

This handsome species is not uncommon in Chiriqui. It may be known from the allied forms by the three spots on each elytron, and by the unicarinate hind angles of the thorax, the usual long supra-marginal carina being almost entirely obliterated. In the nearly related *P. sexnotatus*, Steinh., from Colombia, the small additional spot on each elytron is placed at the middle of the base, and the hind angles of the thorax are bicarinate.

## ANCHASTUS.

*Anchastus*, Leconte, Trans. Am. Phil. Soc. n. ser. x. p. 459 (1853); Candèze, Monogr. Elat. ii. p. 397 (part.).
*Brachycrepis*, Leconte, loc. cit. p. 460; Kiesenwetter, Naturg. Ins. Deutschl. iv. 2, p. 349.
*Crepidotritus*, Leconte, Class. Col. N. Am. p. 167 (1861).
*Monelasmus*, Candèze, Monogr. Elat. iv. p. 332 (1863) (part.).

*Anchastus*, as adopted here, includes the majority of the species referred to it by

Candèze (*A. hilaris* and its allies being excluded), and with these I am compelled to associate three out of the four members of his genus *Monelasmus* *, the differences becoming evanescent in the new species here described. *Physorhinus galapagoensis*, Cand. (nec Waterh.), also probably belongs to it. In *Monelasmus augusti* and *M. moratus* (and no doubt in *M. jamaicæ* also), as in some of the new species here described, the frontal margin or carina is obliterated in the middle, but the front is in all cases raised above the anterior margin of the head and separated from it by a narrow space. The species here referred to *Anchastus* agree in the following particulars:—Front separated from the anterior margin of the head by a rounded or subangular ridge, which is sometimes obliterated in the middle; the sutures between the prosternum and propleuræ narrowly separated, channelled or not in front; posterior coxal plates abruptly and subquadrangularly widened inwards, in some species acutely triangularly dilated near the middle; third tarsal joint rather broadly lamellate beneath, the fourth joint small. The third joint of the antennæ is usually as large as the fourth, but in some of the species it is not longer than the second.

The channelling of the prosternal sutures (a character used to separate *Elater* from *Megapenthes*) varies according to the species. *Monelasmus* is placed by Candèze in his 'Ludiites'; but in *Ludius* and its allies the front is not separated from the anterior margin of the head, and the third tarsal joint is simple. With three exceptions, the whole of the Central-American species are brightly coloured, many of them having the thorax or elytra maculated. All appear to be rare. The genus, which is very widely distributed, includes some of the most interesting Elateridæ of our region. The Central-American representatives may be grouped by their structural characters thus:—

*a*. Hind angles of the prothorax obliquely unicarinate; elytra separately rounded at the apex; coxal plates broadly widened inwards, and moderately wide outwards.
  *a'*. Antennæ with the third and fourth joints equal; prosternal sutures not or feebly channelled in front.
    *a''*. Front completely margined . . . . . Species 1–4.
    *b''*. Front incompletely margined . . . . . Species 5–10.
  *b'*. Antennæ with the third joint a little shorter than the fourth; prosternal sutures channelled in front; front completely margined . . . Species 11.
*b*. Hind angles of the prothorax longitudinally unicarinate; antennæ with the third joint a little shorter than the fourth; front incompletely margined; prosternal sutures channelled in front; elytra conjointly rounded at the apex; coxal plates moderately widened inwards, becoming very narrow outwards . . . . . Species 12.

* The name *Monelasmus* can perhaps be retained for *M. guyanensis*, Cand., that insect having the head differently formed:—The antennal cavities are large and deep, and limited internally by an oblique ridge, which extends upwards and nearly meets the margined, subangular, prominent frontal plate.

*c*. Hind angles of the prothorax not carinate; antennæ with the third joint a little shorter than the fourth; front completely margined; prosternal sutures not channelled in front; elytra separately rounded at the apex; coxal plates broadly widened inwards, becoming very narrow outwards . . . . . Species 13.

*d*. Hind angles of the prothorax bicarinate; front completely margined; prosternal sutures deeply channelled in front; elytra conjointly rounded at the apex; coxal plates broadly widened inwards, triangularly dilated near the middle, and becoming very narrow outwards.

*c'*. Antennæ with the third and fourth joints equal . . . . . Species 14, 15.

*d'*. Antennæ with the third joint very short, not longer than the second . Species 16.

## 1. **Anchastus sanguineus.** (Tab. XVII. fig. 14, ♂.)

♂. Elliptic, broad, rather convex, moderately shining; sanguineous, the labrum, the antennæ, a broad median vitta on the prothorax, not quite reaching the base, the scutellum, the legs, and the body beneath, the pro- and mesosternum and the propleuræ excepted, deep black; above and beneath thickly pubescent, the pubescence partaking of the ground-colour. Head thickly punctured, convex, declivous in front, the front separated by a short space from the anterior margin and feebly carinate; antennæ moderately long, the joints from the third broadly flattened and serrate, 3 and 4 equal, 2 very small. Prothorax broader than long, the sides rapidly converging from the base, a little rounded in front; the hind angles greatly produced, divergent, sharply and obliquely unicarinate; the surface closely, finely punctate. Elytra as wide as the prothorax at the base, arcuately narrowing from about the middle, a little flattened on the disc and explanate at the sides, the apices separately rounded; coarsely and deeply punctate-striate, the interstices convex and thickly punctured, subgranulate towards the base. Beneath finely, rather closely punctate; prosternal sutures not channelled in front.

♀. *Var.* The labrum, the body beneath, the coxæ, and trochanters rufo-testaceous, the median vitta on the prothorax obliterated, the scutellum with the apex only black; the antennæ less broadly dilated; the prothorax more rounded at the sides and less narrowed in front; the frontal carina less distinct in the middle.

Length 9, breadth $3\frac{1}{4}$ millim.

*Hab.* Mexico, Vera Cruz (*coll. Janson*: ♀), Teapa in Tabasco (*H. H. Smith*: ♂).

This very fine species either varies greatly in the colour of the under surface &c., or the sexes differ in this respect. Unfortunately a single example only of each sex has been received. It has no near ally, so far as I am aware, and the insect is unknown to Dr. Candèze.

## 2. **Anchastus ruficollis.** (Tab. XVII. fig. 15, ♂.)

Elongate-oval, rather convex, shining; deep black, the prothorax rufous, the propleuræ rufo-testaceous; thickly pubescent, the pubescence on the prothorax and elytra partaking of the ground-colour, that on the head and on great part of the under surface fulvo-cinereous. Head thickly, finely punctate, convex, declivous in front, the front (as viewed from beneath) sharply margined; antennæ (♂) extending to a little beyond the hind angles of the prothorax, the joints from the third moderately widened and serrate, 3 and 4 equal in length. Prothorax about as long as broad, longitudinally convex, subparallel to near the middle and thence arcuately narrowing to the apex; the hind angles acute, strongly produced, not divergent, sharply and obliquely unicarinate, the carina short; the surface very finely, sparsely punctate, the punctuation becoming closer towards the sides and apex, canaliculate behind. Elytra comparatively short, arcuately narrowing from about the middle, separately rounded at the apex; finely and shallowly punctate-striate,

the interstices quite flat throughout and thickly punctured. Beneath thickly punctured; prosternal sutures feebly channelled in front.

Length $7\frac{1}{4}$, breadth $2\frac{1}{4}$ millim. (♂.)

*Hab.* MEXICO, Cerro de Plumas (*Höge*).

Two specimens. This insect resembles some of the similarly-coloured species of the genus *Elater*, but it may be at once distinguished from them by the strongly lamellate third tarsal joint. The North-American *A. bicolor*, Lec., is an allied form, differing from the present insect in the long and almost straight thoracic carina, the red head, &c.

### 3. **Anchastus discoideus.** (Tab. XVII. fig. 16, ♂.)

Moderately elongate, feebly convex, opaque; black, the prothorax rufo-testaceous, with a black patch on the disc, the elytra with a broad marginal testaceous stripe, extending from the base to near the apex and widening a little in front, the legs brownish, the femora infuscate in the middle, the propleuræ testaceous; thickly pubescent, the pubescence yellowish-cinereous, fuscous on the dark portion of the elytra, a line down the suture in one specimen excepted. Head densely punctured, moderately convex, margined in front; antennæ about half the length of the body in the male, shorter in the female, the joints from the third moderately widened and serrate, 3 and 4 equal in length. Prothorax about as long as broad, gradually narrowing from the base in the male, broader and more rounded at the sides in the female; the hind angles acute, strongly produced, slightly divergent in the male, obsoletely and obliquely unicarinate, the carina short; the surface densely and rugulosely punctured. Elytra narrowing from the middle in the female, more attenuate in the male, separately rounded at the apex; rather deeply punctate-striate, the interstices feebly convex, closely and rugulosely punctured. Beneath closely punctured; prosternal sutures not channelled in front.

Length 6–$6\frac{1}{4}$, breadth $1\frac{2}{3}$–2 millim. (♂ ♀.)

*Hab.* MEXICO, Acapulco in Guerrero (*Höge*).

One pair. Differs from all the species here described in the dull rugulose thorax, the elytral interstices also being rugulose. The female is considerably broader and more parallel than the male. The male has a line of flavous pubescence along the suture, of which there is no trace in the female. The discoidal spot on the thorax is variable in size. The elytra are coloured as in *A. flavovittatus*, except that the flavous vittæ extend outwards to the lateral margins at the base. *A. discoideus* approaches *A. flavomaculatus*; both are unknown to Dr. Candèze.

### 4. **Anchastus circumcinctus.** (Tab. XVII. fig. 17, ♀.)

Oblong-oval, rather broad, moderately convex, flattened above, shining; the antennæ and head black, the latter with a small rufous spot on either side in front; the prothorax flavo-testaceous, with a large oval black patch on the disc extending to the base and apex; the scutellum and elytra black, the latter with a transverse reddish mark at the base and a testaceous marginal stripe extending to near the apex; the prosternum in front and the propleuræ yellow, the abdomen, except at the sides and apex, in great part ferruginous, the rest of the under surface black; the legs black, the femora in great part, the coxæ, and the trochanters testaceous; above and beneath thickly pubescent, the pubescence on the elytra fuscous except along the suture and on the marginal vitta, where it is flavous, that on the under surface yellowish-cinereous. Head closely punctured, convex, declivous in front, the front rounded, finely margined, and separated from the anterior margin by a narrow space; antennæ short, scarcely reaching the hind angles

of the prothorax, the joints from the third widened and serrate, 3 and 4 equal, 2 very small. Prothorax about as long as broad, parallel behind, the sides rounded and converging from the basal third; the hind angles greatly produced, acute, obliquely unicarinate; the surface closely, finely punctate, feebly canaliculate behind. Elytra narrower than the prothorax, narrowing from the base, separately rounded at the apex; punctate-striate, the punctures closely placed, the interstices flat on the disc and feebly convex at the sides, closely punctate. Beneath closely, finely punctate; prosternal sutures obsoletely channelled in front.

Length 10, breadth $3\frac{1}{2}$ millim. (♀.)

*Hab.* Honduras (*Sallé*).

One specimen. This insect, at first sight, appears to be nothing more than a colour-variety of *A.* (*Monelasmus*) *augusti*; but it differs from that species in having the front rounded and completely margined (in *A. augusti* the front is more angular and not margined in the middle), the thorax less densely punctured and with an oval black patch on the middle of the disc, the lateral vitta of the elytra extending to the margin (in *A. augusti* it is placed on the ninth interstice), and the femora and under surface not entirely black. This species forms a connecting-link between *A. augusti* and the more typical members of the genus *Anchastus*.

### 5. **Anchastus augusti.** (Tab. XVII. fig. 18, ♀, var.)

*Monelasmus augusti*, Cand. Monogr. Elat. iv. p. 333, t. 4. figg. 15, 15 *a* [1].

*Hab.* Mexico (*Sallé, in coll. Chevrolat* [1]; *coll. Janson, ex Parry* [1]); British Honduras (*coll. Janson*); Guatemala, Panzos in Vera Paz (*Conradt*).

I have seen three specimens of this species, including one of the types contained in the Janson collection. The thorax in the type has two very large, elongate, black marks, these being shorter and more rounded in the example from Panzos, from which our figure is taken. The propleuræ are sometimes entirely flavous. The submarginal flavous stripe varies in length. The single thoracic carina is sharply defined and very oblique. The head is declivous in front, the frontal plate subangular and separated from the anterior margin by a narrow space, the carina obliterated in the centre.

### 6. **Anchastus diversus.** (Tab. XVII. fig. 19, ♀.)

Elongate-oval, rather convex, slightly shining; deep black, the head, prothorax, a large patch on the basal half of the elytra, obliquely narrowing from opposite the scutellum to the lateral margin, and the propleuræ rufous or orange-red; thickly pubescent, the pubescence partaking of the ground-colour above and brownish beneath. Head finely and closely punctured, convex, declivous in front, the front separated from the anterior margin by a narrow space, the carina obliterated in the middle; antennæ about reaching the hind angles of the prothorax, the joints from the third moderately widened and serrate, 3 and 4 equal in length. Prothorax longitudinally convex, as long as broad, parallel behind, gradually and arcuately narrowing from about the middle forwards; the hind angles acute, strongly produced behind, sharply and obliquely unicarinate; the surface closely and very finely punctured, deeply canaliculate behind. Elytra moderately long, slightly narrower than the prothorax at the base, narrowing from a little below the shoulder, separately rounded at the apex; shallowly punctate-striate, the interstices flat and closely

punctured. Beneath closely, the prosternum and propleuræ sparsely, punctured; prosternal sutures not channelled in front.

Length $8\frac{2}{3}$–10, breadth $2\frac{7}{8}$–$3\frac{1}{4}$ millim. (♀.)

*Hab.* NICARAGUA, Chontales (*Belt*).

Two examples, one of which is a female, the other perhaps a male. This insect approaches *A.* (*Monelasmus*) *augusti*, Cand., but it is very differently coloured, and has the front a little more raised anteriorly and more distinctly separated from the anterior margin of the head.

### 7. **Anchastus melanurus.** (Tab. XVII. figg. 20, ♀; 20 *a*, hind angles of prothorax.)

Elongate-oval, moderately convex, feebly shining; luteous, the base of the elytra a little paler, the antennæ, the scutellum, a large patch at the apex of the elytra, the under surface, the propleuræ excepted, and the legs, deep black; above and beneath thickly pubescent, the pubescence on the upper surface partaking of the ground-colour, that on the under surface, except at the sides of the abdomen, fulvous. Head thickly punctured, convex, declivous in front; the front separated from the anterior margin by a narrow space, the carina indistinct in the middle; antennæ about reaching the hind angles of the prothorax in the male, a little shorter in the female, the joints from the third moderately widened and serrate, 3 and 4 equal, 2 very short. Prothorax longitudinally convex, as long as broad, narrowing from the base forwards, the sides rounded anteriorly; the hind angles strongly, acutely produced, not divergent, obliquely unicarinate; the surface very finely and closely punctured. Elytra nearly as wide as the prothorax at the base, narrowing from the basal third, the apices separately rounded; rather coarsely punctate-striate, the interstices flat on the disc, feebly convex at the sides, closely, very finely punctate. Beneath closely, finely punctate, the prosternum more sparsely punctured; prosternal sutures not channelled in front.

Length 8–10, breadth $2\frac{1}{2}$–$3\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Two specimens. Allied to *A. diversus*, but differing from it in the more coarsely punctate-striate elytra, the black patch on which is confined to the apical third, and the less parallel thorax.

### 8. **Anchastus seminiger.** (Tab. XVII. fig. 21.)

Elongate-oval, moderately convex, rather shining; deep black, the head and prothorax rufo- or sanguineo-testaceous, the elytra with the third interstice at the base and a spot at the shoulders beneath, the pro- and mesosternum, the labrum, and palpi testaceous, the ventral segments 1–4, except at the sides, and the propleuræ rufo-testaceous, the antennæ and legs, the base of the femora excepted, deep black; above and beneath thickly sericeo-pubescent, the pubescence on the upper surface partaking of the ground-colour, that on the under surface in great part fulvous. Head closely, finely punctate, convex, declivous in front; the front separated from the anterior margin by a narrow space, the carina obsolete in the middle; antennæ extending a little beyond the hind angles of the prothorax, the joints from the third broadly dilated and serrate, 3 and 4 equal in length, 2 very small. Prothorax about as long as broad, gradually and arcuately narrowing from the base forwards; the hind angles strongly produced behind, not divergent, rather obtuse at the tip, feebly and obliquely unicarinate; the surface closely, very finely punctate, canaliculate behind. Elytra slightly narrower than the prothorax, gradually narrowing from a little below the shoulders, flattened on the disc, separately rounded at the apex; rather coarsely punctate-striate, the punctures of each stria very distinct, the interstices flat and closely, very finely punctate. Beneath

closely and finely, the prosternum and propleuræ sparsely, punctate; prosternal sutures not channelled in front.

Length $9\frac{2}{3}$–10, breadth 3 millim.

*Hab.* Panama, Bugaba (*Champion*).

Two specimens, probably males. This insect is a close ally of *A. candezei*, Steinh., from Canoas, Colombia, the type (♂) of which is before me, but differs from it in the shorter and more oval elytra, with the flavous stripe on the third interstice abbreviated and the striæ more coarsely punctured, the rufo-testaceous head, the more feebly carinate hind angles of the thorax, the much shorter antennæ, the blacker under surface (in *A. candezei* the fifth ventral segment only is black), &c.

### 9. **Anchastus maculicollis.** (Tab. XVII. fig. 22, ♀.)

Moderately elongate, rather convex, slightly shining; black, the head obscure testaceous in front; the prothorax with the sides from the base to near the apex very broadly rufo-testaceous (leaving a large subtriangular black patch on the anterior part of the disc, extending laterally to near the margin, and posteriorly, in the form of a median vitta, to the base), and the anterior margin and hind angles flavo-testaceous; the elytra each with two narrow fusco-testaceous stripes extending downwards from the base—one on the third interstice, short, and another on the ninth interstice, extending to near the middle; beneath rufo-testaceous, the metasternum broadly black at the sides, the prosternum yellow; the antennæ and legs, the base of the femora excepted, deep black; above and beneath thickly pubescent, the pubescence yellowish beneath and on the light-coloured parts of the prothorax above, for the rest blackish-brown. Head closely, finely punctate, convex, declivous in front; the front separated from the anterior margin by a narrow space, the carina distinct at the sides only; antennæ (♀) short, not extending beyond the hind angles of the prothorax, the joints from the third rather broadly widened and serrate, 3 and 4 equal in length, 2 very small. Prothorax broader than long, narrowing from the base forwards, the sides a little rounded anteriorly; the hind angles strongly produced, acute, slightly divergent, feebly and obliquely unicarinate; the surface closely, finely punctate, canaliculate behind. Elytra moderately long, subparallel to about the middle and arcuately narrowing thence to the apex, the apices separately rounded; deeply punctate-striate, the punctures of each stria very distinct and closely placed, the interstices flat on the disc, feebly convex at the sides, finely and closely punctate. Beneath closely and finely, the prosternum and propleuræ sparsely, punctate; prosternal sutures not channelled in front.

Length $8\frac{1}{2}$, breadth nearly $2\frac{2}{3}$ millim. (♀.)

*Hab.* Panama, Volcan de Chiriqui 2500 feet (*Champion*).

One example. This insect is nearly allied to *A. seminiger*, and I thought, at first, it might be a variety of the female of that species, but, judging from the sexual differences in the other members of the genus, such is evidently not the case. It has a shorter thorax, with more acute hind angles, more parallel elytra, &c.

### 10. **Anchastus bilineatus.** (Tab. XVII. fig. 23.)

Moderately elongate, rather convex, shining; the head with a large triangular flavous frontal patch extending to the margin, black at the sides behind; the prothorax flavous, with a broad black median vitta extending from the base to near the apex, narrowly divided down the middle in front and with each portion curving outwards to the lateral margin (so as to form a large reversed subcampanuliform patch), the flavous lateral portions marked with a rosy-red patch in fresh specimens; the scutellum and elytra black, the latter with a rather broad flavous stripe extending down the third and fourth interstices to near the apex, and the ninth interstice with a short testaceous stripe at the base; beneath flavous or

flavo-testaceous, with the sides of the metasternum broadly, a broad submarginal band extending down the first three ventral segments, and the fifth segment almost entirely, black, the propleuræ with a rufous patch; the antennæ and legs black, the base and apex of the femora, the base of the tibiæ, and the apical joint of the tarsi, testaceous; above and beneath thickly pubescent, the pubescence in great part yellowish- or fulvo-cinereous, sometimes obscure fuscous on the dark portions of the elytra. Head thickly, finely punctate, convex, declivous in front; the front a little raised above the anterior margin, the carina obsolete in the centre; antennæ reaching to a little beyond the hind angles of the prothorax, slightly shorter in the female, the joints from the third rather broadly dilated and serrate, 3 and 4 equal in length. Prothorax rather broader than long, convex, gradually and arcuately narrowing forwards, parallel at the base; the hind angles strongly produced behind, obsoletely and obliquely unicarinate; the surface closely, finely punctate, canaliculate behind. Elytra moderately long, narrowing from a little below the base, separately rounded at the apex; shallowly and rather finely punctate-striate, the punctures of each stria distinct, the interstices flat, closely, very finely punctate. Beneath closely, the prosternum and propleuræ sparsely, punctured; prosternal sutures not channelled in front.

Length 9–10½, breadth 2½–3 millim. (♂ ♀.)

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Five specimens. This peculiar species is allied to *A. maculicollis*, *A. seminiger*, *A. candezei*, &c. The rosy-red lateral marks on the upper and under surfaces of the thorax are only visible in fresh specimens; the black discoidal patch is shaped somewhat as in *A. maculicollis*, except that it is divided down the middle in front and is curved downwards at the sides. The head is coloured as in many species of *Physorhinus*. The oblique thoracic carina is almost obsolete. From *A. maculicollis*, apart from colour, it differs in the less parallel and more shallowly striate elytra, the punctures of the striæ less closely placed and the interstices flatter, and also in the less transverse thorax.

### 11. **Anchastus flavovittatus.** (Tab. XVII. figg. 24, ♀; 25, ♂, var. *α*; 26, ♀, var. *β*.)

Elongate-oval, moderately convex, shining; the head and antennæ black; the prothorax flavous, with a large transversely cordate patch in front, a rather broad marginal stripe extending from the base to the middle, which extends inwards anteriorly, and the base in the centre, black, the disc between these marks rufous; the scutellum and elytra black, the latter with a broad submarginal flavous stripe extending from the base to near the apex; the under surface, the propleuræ excepted, and legs black, the base of the femora sometimes paler; above and beneath thickly pubescent, the pubescence variable in colour—in some specimens blackish-brown on the dark portions of the prothorax and elytra, and in others yellowish-cinereous,—that on the under surface yellowish-cinereous, sometimes blackish-brown at the sides and apex of the abdomen. Head closely, finely punctate, the front sharply margined; antennæ reaching considerably beyond the hind angles of the prothorax in the male, shorter in the female, moderately stout, joint 3 a little shorter and narrower than 4, twice as long as 2. Prothorax convex, about as long as broad, parallel behind, narrowing from the basal third in the male, more rounded at the sides in the female; the hind angles strongly produced, acute, obliquely unicarinate; the surface thickly, finely punctate, deeply canaliculate behind. Elytra gradually narrowing from about the basal third, separately rounded at the apex; punctate-striate, the interstices feebly convex and thickly punctured. Beneath thickly punctured; prosternal sutures channelled in front.

Var. *α*. The prothorax rufo-testaceous, with the black marginal mark obliquely narrowing forwards, and not extending inwards anteriorly, the anterior black patch more extended laterally. (Fig. 25.)

Var. *β*. The prothorax rufous, with the tips of the hind angles and the basal margin in the centre black. (Fig. 26.)

Length 5⅔–7¼, breadth 1⅔–2⅛ millim. (♂ ♀.)

*Hab.* Mexico, Oaxaca, Tapachula (*Höge*); Guatemala, Panzos, Teleman, and San Juan in Vera Paz, Zapote (*Champion*); Nicaraua, Chontales (*Belt*).

Eight specimens:—three (♀) of the typical form, from Chontales, Teleman, and Panzos; four (♂) of the var. α, from Tapachula, San Juan, and Zapote; and one (♀) of the var. β, from Oaxaca. The description, as regards colour, is chiefly taken from a beautifully preserved specimen from Chontales. In the varieties the yellow and rufous portions of the thorax are not clearly defined, being more or less merged into a general rufous or rufo-testaceous tint. The third joint of the antennæ is a little smaller than the fourth. The prosternal sutures are channelled in front.

12. **Anchastus moratus.** (Tab. XVII. figg. 27; 27 *a*, hind angles of prothorax.)

*Monelasmus moratus*, Cand. Monogr. Elat. iv. p. 334[1].

*Hab.* Mexico, San Martin Tuxtla (*Sallé*[1]), Yucatan (*coll. Janson*); Guatemala, San José (*Champion*).—Antilles, Grenada (*H. H. Smith*).

The six examples of this species before me vary slightly in the extent of the black discoidal patch on the thorax, this being sometimes very narrowly divided down the middle so as to form two sinuous stripes. The thorax is almost square, being very little narrowed in front; the carina is short, almost straight, and (as viewed from above) close to the margin. The third joint of the antennæ is a little shorter and narrower than the fourth, and twice the length of the second. The single example obtained by myself was found on the Pacific coast. *A. terminatus*, Cand., from the island of Guadaloupe, is an allied species; it has the head similarly formed.

13. **Anchastus flavomaculatus.** (Tab. XVII. fig. 28, ♂.)

Elongate, rather narrow, feebly convex, slightly shining; black, the head with a small spot in front, and the prothorax with the lateral margins at the apex and a large subtriangular patch on either side behind, orange-yellow; the elytra with a pale flavous submarginal stripe, extending down the seventh and eighth interstices to the middle and dilated inwards at the base; the under surface black, the abdomen pitchy-brown; thickly pubescent, the pubescence yellowish-cinereous, blackish on the dark portions of the elytra. Head closely punctured, moderately convex, margined in front; antennæ elongate, reaching nearly to the middle of the elytra, the joints from the third moderately widened and serrate, 3 slightly shorter than 4, 2 very small. Prothorax as long as broad, subconical, rapidly and obliquely narrowing from about the basal third to the apex; the hind angles narrow, acute, slightly divergent, not carinate; the surface thickly, finely punctate, feebly canaliculate behind. Elytra moderately long, as wide as the prothorax at the base, parallel to the middle and gradually narrowing thence to the apex, the apices separately rounded; finely but rather deeply punctate-striate, the interstices slightly convex, closely and subrugulosely punctured. Beneath thickly, the propleuræ and prosternum sparsely, punctured; prosternal sutures not channelled in front.

Length 7, breadth 2 millim. (♂.)

*Hab.* Guatemala, Sinanja in Vera Paz (*Champion*).

One example. This species differs from all the allied forms in the narrow, subconical thorax, the hind angles of which are not carinate. The antennæ are unusually

elongate; the front is a little less convex than usual in *Anchastus*, but it is limited anteriorly by a distinct carina; the elytral interstices are closely and somewhat rugulosely punctured, so as to appear dull. The insect is unknown to Dr. Candèze.

### 14. **Anchastus forticornis.**

Oblong-oval, moderately convex, shining, thickly and rather coarsely pubescent; pitchy-brown, the front of the head, the basal and apical margins of the prothorax, the scutellum, the basal margin of the elytra, the epipleuræ, and the under surface obscure ferruginous, the antennæ ferrugineo-testaceous, the legs testaceous. Head closely punctured, convex, sharply margined in front; antennæ stout, half the length of the body, feebly serrate, joints 3 and 4 equal, 2 very short. Prothorax a little broader than long, parallel behind, gradually narrowing from about the basal third forwards; the hind angles strongly produced, acute, bicarinate, the outer carina long and near the margin, the inner one shorter and oblique; the surface thickly and somewhat coarsely punctured. Elytra the width of the prothorax at the base, arcuately narrowing from about the basal third, conjointly rounded at the apex; rather coarsely punctate-striate, the interstices feebly convex at the sides, flat on the disc, and somewhat roughly punctured. Beneath closely, rather coarsely punctate; prosternal sutures deeply channelled in front; posterior coxal plates broadly dilated inwards, and becoming exceedingly narrow outwards, the median portion acutely triangularly produced and reaching as far as the first ventral suture.

Length 5, breadth $1\frac{1}{2}$ millim. (♂.)

*Hab.* GUATEMALA, Chacoj in Vera Paz (*Champion*).

One male specimen, found in the Polochic valley. In the form of the posterior coxal plates this small species approaches the genus *Physorhinus*; but differs from it in having the sutures between the prosternum and propleuræ narrowly separated, the third joint of the antennæ as long as the fourth, the head shorter and more declivous, &c. The antennæ are stout and half the length of the body.

### 15. **Anchastus lateritius.**

Moderately long, rather depressed, shining, thickly pubescent; reddish-brown, the prothorax with the base broadly and indeterminately testaceous, the under surface ferruginous, the legs testaceous. Head closely punctured, convex, sharply margined in front; antennæ slender, extending to a little beyond the hind angles of the prothorax, joints 3 and 4 equal, 2 very short. Prothorax slightly broader than long, almost parallel behind, gradually narrowing from about the basal third forwards; the hind angles acute, strongly produced, bicarinate, the outer carina long and near the margin, the inner one shorter and oblique; the surface thickly punctured. Elytra moderately long, as wide as the prothorax at the base, parallel to the middle and narrowing thence to the apex, the apices conjointly rounded; punctate-striate, the interstices almost flat and somewhat sparsely punctured. Beneath closely punctured; prosternal sutures deeply channelled in front; posterior coxal plates abruptly and subtriangularly dilated inwards to half the width of the first ventral segment, becoming exceedingly narrow outwards. Legs slender.

Length $4\frac{2}{3}$, breadth $1\frac{2}{5}$ millim.

*Hab.* GUATEMALA, Mirandilla (*Champion*).

One specimen, probably a female, found on the Pacific slope. This is another species without near ally. It approaches *A. tenuistriatus*, but is smaller, narrower, and less convex, the thorax is longer, the third joint of the antennæ is as long as the fourth, the elytral striæ are distinctly punctured throughout, &c. *A. difficilis*, Fleut., from Venezuela, somewhat resembles *A. lateritius*, but differs from it in the unicarinate hind angles of the thorax, the shorter third joint of the antennæ, &c.

### 16. **Anchastus tenuistriatus.** (Tab. XVIII. figg. 1, 1 *a*, antenna.)

Oblong-oval, rather broad, convex, shining, thickly pubescent; pitchy-brown, the head in front, and the prothorax with the anterior margin and the base obscure testaceous, the elytra with the base on either side of the scutellum and the dilated anterior portion of the epipleuræ testaceous; the antennæ brown, the legs testaceous. Head closely and rugulosely punctured, convex, sharply margined in front; antennæ slender, extending considerably beyond the base of the elytra, joints 2 and 3 short, equal, the two together scarcely so long as 4. Prothorax broader than long, almost parallel behind, the sides rounded and converging from the basal third forwards; the hind angles acute, narrow, greatly produced, bicarinate, the inner carina short and oblique, the outer one long and near the margin; the surface thickly and shallowly punctured, more sparsely so on the middle of the disc behind. Elytra moderately long, slightly widening to about one-fourth from the base and then arcuately narrowing to the apex, the apices conjointly rounded; very finely and distinctly striate, the striæ towards the sides and apex only with fine punctures, the interstices convex and finely, sparsely punctate. Beneath rather sparsely punctured; prosternal sutures deeply channelled to near the middle; posterior coxal plates exceedingly broadly dilated inwards, and becoming very narrow outwards.

Length $5\frac{2}{3}$, breadth 2 millim.

*Hab.* Mexico, Oaxaca (*Höge*).

One specimen, probably a female. This peculiar species differs in many respects from all others of the genus here described. It has the thorax short, with the hind angles bicarinate; the antennæ slender, with the third joint very short; the elytra with very fine, sharply defined striæ, which are punctured towards the base and sides only; the posterior coxal plates exceedingly broadly dilated inwards (almost as wide as in *Physorhinus*); the prosternal sutures channelled to near the middle. The insect is unknown to Dr. Candèze.

## ANCHASTOMORPHUS.

Prosternum moderately wide, subparallel; prosternal sutures double, widely separated for the greater part of their length, obliquely and rather abruptly converging behind, and with a deep channel between them; posterior coxal plates broadly quadrangularly dilated inwards; head deeply sunk into the prothorax, declivous, convex, arcuately margined in front, the front separated from the anterior margin; third tarsal joint with a long, narrow lobe beneath, the fourth joint very small; the other characters as in *Anchastus*.

This genus is proposed for numerous small Tropical-American species included in *Anchastus* by Dr. Candèze; *A. hilaris*, *A. phedrus*, and *A. suturalis*, Cand., may be taken as the types. It includes also *A. trisignatus*, *A. apicalis*, and *A. niger*, Steinh.; *A. grouvellei* and *A. longipennis*, Fleut.; and, probably, *A. ornatus*, *A. seminalis*, *A. pygmæus*, *A. posticus*, and *A. fasciatus*, Cand. In the species enumerated below the thorax has a long supra-marginal carina only, and the third joint of the antennæ is a little longer than the second; these characters, however, are to be found in some of the true *Anchastus*. The prosternal sutures are formed as in the genus *Physorhinus*. Our four species may be separated thus:—

Rufo-testaceous, the elytra with a triangular scutellar patch (in some specimens extending to the humeri) and a median fascia, these markings connected at the suture, and sometimes an ante-apical mark, black . . . . . *phedrus*.

Black; the elytra testaceous, with a large ante-apical black patch . . . . *apicalis.*
Black; the elytra with the suture, and sometimes a humeral patch and an oblique post-median fascia also, testaceous, in some specimens with a broad oblique post-median fascia only testaceous . . . . . *suturalis.*
Black; each elytron usually with two flavous spots—one at the shoulder, the other post-median . . . . . *quadriguttatus.*

### 1. **Anchastomorphus phedrus.** (Tab. XVIII. fig. 2.)

*Anchastus phedrus,* Cand. Monogr. Elat. ii. p. 401 [1].
*Anchastus crux-nigra,* Fleut. Ann. Soc. Ent. Belg. 1895, p. 170 [2].

*Hab.* MEXICO, Chilpancingo in Guerrero (*Höge*), Teapa in Tabasco (*Pilate, in coll. Janson*); GUATEMALA, San Isidro (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, David (*Champion*).—BRAZIL [1 2].

The single specimens found at each of the above localities agree well with others from Brazil in the Janson collection named *A. phedrus* by Candèze; but they have the thoracic carina elongate, extending at least as far forwards as the middle of the thorax. The elytra have a triangular scutellar patch, sometimes extending to the humeri (as in *A. crux-nigra,* Fleut.), and a rather broad median fascia, connected along the suture, and sometimes an ante-apical mark, black. The head and thorax vary in colour from rufo-testaceous to black, but the hind angles of the latter are always pale. The thorax is considerably broader than long. The insect varies from $2\frac{1}{2}$–4 millim. in length. We are indebted to M. Fleutiaux for the loan of his types of *A. crux-nigra* and *A. grouvellei*: the former is certainly, and the latter probably, a colour-variety of *A. phedrus.* An example from Chontales is figured.

### 2. **Anchastomorphus apicalis.** (Tab. XVIII. fig. 3.)

*Anchastus apicalis;* Steinh. Mittheil. münch. Ent. Ver. i. p. 83 (1877) [1].

*Hab.* GUATEMALA, Senahu in Vera Paz (*Champion*).—COLOMBIA, Ocaña [1].

One specimen, differing from the type, kindly communicated by M. René Oberthür, in having the apical patch of the elytra black and sharply defined, the black not extending along the margins to the base, and the basal five joints of the antennæ (which are mutilated in the type) rufo-testaceous. The hind angles of the thorax are testaceous.

### 3. **Anchastomorphus suturalis.** (Tab. XVIII. figg. 4, var. $\alpha$; 5, var. $\gamma$.)

*Anchastus suturalis,* Cand. Elat. Nouv. i. p. 27 (1864) [1].

*Hab.* MEXICO, Cordova in Vera Cruz (*Sallé* [1]); GUATEMALA, San Isidro, Las Mercedes (*Champion*).

Var. $\alpha$. The elytra with a short stripe at the shoulders and a transverse or oblique fascia at one-third from

the apex, the latter extending forwards along the suture to near the base, and in some specimens posteriorly to the apex, testaceous. (Fig. 4.)

*Hab.* GUATEMALA, Cerro Zunil (*Champion*). Five specimens.

Var. $\beta$. The elytra as in $\alpha$, but with the oblique fascia extending along the suture to the base and there connected with the humeral patch.

*Hab.* PANAMA, Volcan de Chiriqui (*Champion*). Two specimens.

Var. $\gamma$. The elytra with a rather broad oblique post-median fascia testaceous or flavo-testaceous, the suture in one specimen pitchy-brown. (Fig. 5.)

*Hab.* PANAMA, Bugaba and Boquete in Chiriqui (*Champion*). Two specimens.

The type of this species is of the female sex, and, judging from the specimens before me, of unusually large size. We have three examples (♂ ♀: length 3 millim.) from Guatemala agreeing with it in colour, except that the sutural stripe is considerably narrower. *A. suturalis* is described [1] as having the hind angles of the thorax bicarinate, but I am unable to detect the slightest trace of an inner carina (except along the basal margin) in the type: there is a fine, straight carina near the lateral margin extending forwards fully to the middle of the thorax, this becoming very faint in some of our specimens, and nothing more. The thorax is, at least in the male, feebly sinuate at the side behind, so that the hind angles are slightly divaricate. The colour of the antennæ and under surface is variable. The length varies from $2\frac{1}{2}$–5 millim. The varieties are connected with the type by intermediate forms, and they cannot be satisfactorily separated from *A. suturalis*.

4. **Anchastomorphus quadriguttatus.** (Tab. XVIII. figg. 6; 6 *a*, underside of the prothorax.)

Oblong-oval, rather convex, shining, thickly clothed with yellowish-cinereous pubescence; black, the elytra each with two large flavo-testaceous spots—one at the shoulder and the other on the disc at about one-third from the apex, the latter not quite reaching the sutural or lateral margin and sometimes indistinct,—the hind angles of the prothorax and the legs testaceous; the antennæ brown, with the base paler, or entirely ferrugineo-testaceous. Head convex, closely, finely punctate, the frontal carina well defined, rounded; antennæ about half the length of the body in the male, shorter in the female, joint 3 considerably longer than 2, a little shorter and narrower than 4. Prothorax transverse, the sides rounded from the middle forwards and sinuate behind; the hind angles narrow, acute, and divergent, finely unicarinate, the carina straight, close to the margin, and extending forwards to the middle of the prothorax; the surface rather sparsely, finely punctate. Elytra comparatively short, narrowing from a little below the base; finely punctate-striate, the interstices flat and sparsely punctured. Beneath thickly punctate, the prosternum and the middle of the metasternum almost smooth; the sutures between the prosternum and propleuræ widely separated, converging behind, canaliculate; posterior coxal plates widened inwards to half the width of the first ventral segment.

Var. $\alpha$. The upper surface entirely black.

Length $2\frac{2}{3}$–$3\frac{1}{3}$, breadth 1 millim. (♂ ♀.)

*Hab.* GUATEMALA, Cubilguitz, Lanquin, San Juan, Tamahu, and Tactic, all in Vera Paz (*Champion*).

Ten examples, four of which belong to the var. *α*. This very small species is allied to *A. suturalis*, *A. phedrus*, &c. The typical, or spotted form, approaches the var. *α* of *A. suturalis*. There is a specimen from Rio Janeiro in the Janson collection, from that of Candèze, apparently belonging to the unicolorous variety.

## Group **POMACHILIINI.**

### PSILONISCUS.

*Psiloniscus*, Candèze, Monogr. Elat. iii. p. 3 (1860).

Four species of this genus were described by Candèze, all from Mexico; two of these have an extended distribution within our limits, one reaching as far south as Ecuador. An interesting new form is now added from Costa Rica. The males do not appear to have been known to Candèze; they have very long antennæ, nearly or quite half the length of the body. Our five species may be thus separated:—

*a*. Apex of the elytra truncate, the outer angle dentiform.
  *a'*. Pubescence on the elytra forming more or less distinct spots.
    *a''*. Prothorax with a space down the middle and two spots on either side of it impunctate; hind angles bicarinate . . . . . *sticticus*.
    *b''*. Prothorax with a space down the middle only impunctate; hind angles not carinate . . . . . *costaricensis*.
    *c''*. Prothorax uniformly punctured; elytra infuscate at the tip . . . . . *apicalis*.
  *b'*. Pubescence on the elytra uniform . . . . . *borborurus*.
*b*. Apex of the elytra rounded . . . . . *brunneus*.

#### 1. **Psiloniscus sticticus.** (Tab. XVIII. fig. 7, ♂.)

*Psiloniscus sticticus*, Cand. Monogr. Elat. iii. p. 6[1].

*Hab.* Mexico, Orizaba, Cordova (*Sallé*[1]), Misantla and Jalapa (*Höge*); Guatemala, Coban in Vera Paz (*Conradt*), Sinanja and Senahu in Vera Paz, Cerro Zunil, Calderas, Dueñas, Capetillo (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica, Volcan de Irazu (*Rogers*).

This is the commonest species of the genus. The antennæ are about half the length of the body in the male, very much shorter in the female. The hind angles of the thorax are distinctly bicarinate. The thorax is very irregularly punctured, a space down the middle and two spots on either side of it being impunctate; the elytra have on the alternate interstices a series of impunctate glabrous spaces, in front of each of which is an oblong cluster of pale hairs. A male from Cerro Zunil is figured.

#### 2. **Psiloniscus costaricensis.** (Tab. XVIII. fig. 8, ♀.)

Very elongate, narrow, shining; brownish-testaceous, the head with a spot on the vertex, the prothorax with a broad median vitta, and the elytra with a patch at the shoulders, blackish-æneous; the

prosternum, the inner part of the propleuræ, and the middle of the metasternum and of the first two ventral segments, blackish-æneous, the antennæ fusco-ferruginous; above and beneath sparsely clothed with rather coarse, long, decumbent, yellowish-cinereous pubescence, the pubescence closer along the sides of the prothorax, and forming patches here and there on the elytra and abdomen. Head thickly punctured, a small space on the middle of the vertex excepted, sharply margined in front; antennæ short, extending slightly beyond the hind angles of the prothorax, rather stout, feebly carinate, joint 3 very little longer than 2, the two together not nearly so long as 4. Prothorax much longer than broad, subconical; the hind angles strongly produced, divergent, slightly incurved at the tip, not carinate; the surface thickly and irregularly punctured at the sides, very sparsely so on the disc, down the centre of which is an impunctate space, obsoletely canaliculate behind. Elytra very elongate, narrowing from the base, the sides almost straight, the apices truncate, the outer angle dentiform; with rows of coarse, somewhat widely separated punctures placed in shallow striæ, the interstices convex and very sparsely, irregularly punctate. Beneath closely punctured.

Length 15, breadth 3 millim. (♀.)

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*).

One female example. Allied to *P. apicalis*, but paler, the apex of the elytra not infuscate, the pubescence sparser, the thorax very sparsely punctured on the disc, down the centre of which (as in *P. sticticus*) there is a smooth space, the elytral interstices smoother. The non-carinate hind angles of the thorax, &c., distinguish it from *P. sticticus*. The patches of pubescence are more distinct towards the sides of the elytra than on the disc.

### 3. **Psiloniscus apicalis.** (Tab. XVIII. fig. 9, ♂.)

*Psiloniscus apicalis*, Cand. Monogr. Elat. iii. p. 4, t. 1. figg. 1, 1 *a–c* [1].

*Hab.* Mexico [1], Orizaba (*Sallé*), Misantla in Vera Cruz (*Höge*); Guatemala, Cerro Zunil (*Champion*); Panama, Volcan de Chiriqui (*Champion*).—Ecuador (*coll. Janson*).

We have numerous examples of both sexes of this species. The antennæ in the male are nearly half the length of the body; in the female they scarcely reach the hind angles of the thorax.

### 4. **Psiloniscus borborurus.**

*Psiloniscus borborurus*, Cand. Monogr. Elat. iii. p. 5, t. 1. fig. 2 [1].

*Hab.* Mexico, Cordova (*Sallé* [1]).

The type (♀) of this species is still unique in the Sallé collection.

### 5. **Psiloniscus brunneus.** (Tab. XVIII. fig. 10, ♀.)

*Psiloniscus brunneus*, Cand. Monogr. Elat. iii. p. 6 [1].

*Hab.* Mexico, San Andres Chalchicomula (*Sallé* [1]), Jalapa (*Höge*), Omilteme in Guerrero (*H. H. Smith*); Guatemala, Tecpan (*Conradt*).

I have seen six examples of this species, including the types. The specimens

described by Candèze are females. The male, of which we have a single example from the Los Altos region of Guatemala, has much longer and stouter antennæ. These organs in the male are nearly half the length of the body; in the female they extend to a little beyond the humeri. The single female specimen from Omilteme is unusually large and broad, and has the third joint of the antennæ much longer than the second. The insect varies in length from $9\frac{1}{2}$–15 millim. A female example from Jalapa is figured.

## PARANIUS.

Head deeply sunk into the prothorax; eyes rather large; front convex, declivous, separated from the anterior margin of the head, sharply and triangularly margined; the mouth situated beneath; antennæ slender, joints 2 and 3 short, equal, 4–11 elongate, the basal joint rather short; prothorax narrow, almost as wide in front as behind, with long, narrow, strongly divaricate hind angles; elytra very elongate, depressed, much wider than the prothorax; prosternum with a broad chin-piece; prosternal sutures double, sinuous, very narrowly separated, not channelled; prosternal process declivous behind the coxæ, narrow, without angular projection before the tip; mesosternum depressed, the borders of the cavity not raised; intermediate coxæ separated only by a narrow lamina; posterior coxal plates moderately wide inwards and obliquely narrowing outwards, very feebly subangulate at about the inner third; legs elongate, slender; tarsi filiform, clothed with fine hairs beneath, the first joint of the hind pair about as long as the following two joints united.

The above characters are taken from a single species from Northern Mexico. The genus seems to be nearest allied to *Anius* and *Psiloniscus*, but it differs from both of them in several important details. The coxal plates are less abruptly dilated inwards than in most of the Pomachiliini; the intermediate coxæ are very narrowly separated; the mesosternum is depressed; the marginal carina of the front extends obliquely downwards on either side to the middle, the front thus forming a triangular plate, the median portion of which is not visible from above; the prosternal sutures are sinuous and not channelled. The basal joint of the antennæ is rather short, as in *Psiloniscus*.

### 1. **Paranius mexicanus.** (Tab. XVIII. fig. 11, ♂.)

Very elongate, depressed, rather narrow, moderately shining; ferruginous, the elytra piceous, the legs testaceous; above somewhat thickly, beneath sparsely, clothed with fine yellowish-cinereous pubescence. Head densely, rugosely punctured; antennæ about two-fifths the length of the body. Prothorax longer than broad, with the sides feebly rounded from the middle forwards and sinuate behind; the hind angles acute, unicarinate; the surface closely and somewhat coarsely punctured, the punctuation becoming denser and umbilicate towards the sides and base, obsoletely canaliculate behind, and transversely depressed on either side of the middle before the base. Elytra very elongate, depressed, fully one-third wider than the prothorax, parallel to the middle, and arcuately narrowing thence to the apex, the apices conjointly rounded; punctate-striate, the interstices flat and thickly punctured. Beneath finely and rather sparsely punctured. Length $9\frac{2}{3}$, breadth $2\frac{1}{3}$ millim. (♂.)

*Hab.* Mexico, Ciudad in Durango (*Höge*).

One specimen.

## DEROMECUS.

*Deromecus*, Solier, in Gay's Hist. fis. y polit. de Chile, Zool. v. p. 11 (1851); Candèze, Monogr. Elat. iii. p. 7.
*Podonema*, Solier, loc. cit. p. 19.
*Mecothorax*, Solier, loc. cit. p. 22.

The described species of this genus are all Chilian, with the exception of two from Colombia. The single species from Mexico here referred to it possesses all the structural characters of *Deromecus*.

### 1. **Deromecus trivittatus.** (Tab. XVIII. fig. 12.)

Elongate, narrow, flattened above, slightly shining; black, the prothorax with the anterior margin partly or entirely and the hind angles testaceous; the elytra testaceous, with the suture, and a rather broad marginal vitta extending from just below the shoulder to the apex, piceous or black; the antennæ piceous or pitchy-brown, with the basal joint testaceous; the legs and mouth-parts testaceous; the abdomen pitchy-brown, bordered with testaceous; above and beneath thickly clothed with yellowish-cinereous pubescence. Head moderately convex, densely punctured, the front rounded anteriorly and with a very prominent marginal carina; antennæ slender, nearly half the length of the body, joints 2 and 3 equal, the two together as long as 4. Prothorax narrow, a little longer than broad, subparallel from the middle to the apex, strongly and obliquely dilated behind, with the hind angles greatly extended and divergent; the latter narrow, acute, and not carinate; the surface closely, somewhat coarsely, punctate. Elytra elongate, much wider than the prothorax, flattened on the disc, narrowing almost from the base, truncate at the apex, with the sutural and outer angles sharp; punctate-striate, the interstices flat on the disc, feebly convex at the sides, and somewhat thickly punctured. Beneath closely punctured; prosternal sutures channelled in front; posterior coxal plates considerably widened from the middle inwards.
Length $7\frac{1}{2}$–8, breadth $1\frac{7}{8}$ millim.

*Hab.* Mexico, Yolotepec in Oaxaca (*Sallé*).

Three examples, apparently males. This species belongs to Candèze's first section of the genus; the insect is unknown to him.

## SMILICERUS.

*Smilicerus*, Candèze, Monogr. Elat. iii. p. 20 (1860).

A Tropical-American genus containing four described species, one of which inhabits Nicaragua, the others being found in the northern parts of South America.

### 1. **Smilicerus belti.** (Tab. XVIII. fig. 14, ♂.)

*Smilicerus belti*, Sharp, Ent. Monthly Mag. xvii. p. 111 (1880)[1].

*Hab.* Nicaragua, Chontales (*Belt*[1]).

We have received a single specimen of this remarkable species. It has the fifth ventral segment produced into a sharp spine at the apex.

## POMACHILIUS.

*Pomachilius*, Eschscholtz, in Thon's Archiv, ii. 1, p. 31 (1829); Candèze, Monogr. Elat. iii. p. 22.
*Pomatochilus*, Gemminger & Harold, Cat. Col. v. p. 1541.

The fifty-four described species of this genus are all from Tropical South America. Two are now added from the State of Panama.

Elytra each produced into a long, sharp spine at the apex; the fifth ventral segment also armed with a long spine . . . . . *spinifer*.
Elytra truncate at the apex, the outer apical angle acute; the fifth ventral segment unarmed . . . . . *mucronatus*.

### 1. **Pomachilius spinifer.** (Tab. XVIII. fig. 16.)

Elongate, very narrow, rather convex, slightly shining; black, the prothorax with the anterior margin bordered with testaceous on either side behind the eyes, the hind angles usually obscure ferruginous; the elytra brown, with a very broad, common, triangular patch at the base, extending narrowly down the suture to beyond the middle, and the extreme apex, piceous or black, in some specimens almost entirely piceous; the antennæ piceous, with the basal joints sometimes reddish; the legs ferrugineo-testaceous; above and beneath thickly clothed with fine, decumbent, sericeous pubescence, the elytra also with a few very widely scattered erect hairs towards the sides, the pubescence on the elytra fulvous, except on the dark basal portion, that on the rest of the surface yellowish-cinereous. Head closely, finely punctate, sharply margined in front; antennæ slender, extending to considerably beyond the humeri in the male, scarcely shorter in the female, joints 2 and 3 equal in length, the two together longer than 4. Prothorax subcylindrical, much longer than broad, very slightly widening from the middle forwards, convex in front; the hind angles narrowly and acutely produced, divergent, finely unicarinate, the carina placed near the margin; the surface densely, very finely punctate. Elytra very elongate, a little wider than the prothorax, convex in front, slightly rounded at the sides, narrowing from about the basal third to the apex, the apices each produced into a long, sharp spine; punctate-striate, the interstices slightly convex, very finely and closely punctured. Beneath densely, very finely punctate; fifth ventral segment produced into a long, fine, sharp spine at the apex.

Length 8–9, breadth $1\frac{2}{3}$–$1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 4000 feet (*Champion*).

Eleven examples. This insect resembles *P. linearis*, Cand., &c., in its elongate, narrow shape; but it has the apex of each elytron produced into a long sharp spine, and the fifth ventral segment also armed with a sharp spine at the tip. It belongs to Candèze's first section of the genus, and is perhaps nearest allied to his *P. cuspidatus* from Venezuela.

### 2. **Pomachilius mucronatus.**

Elongate, very narrow, rather convex, subopaque; black or brownish-black, the prothorax with the anterior margin bordered with testaceous on either side behind the eyes, the hind angles sometimes obscure testaceous, the antennæ fusco-ferruginous, the legs flavo-testaceous; above and beneath thickly clothed with a fine, sericeous, decumbent, yellowish- or fulvo-cinereous pubescence. Head thickly, finely punctate, sharply margined in front; antennæ slender, nearly half the length of the body in the male, slightly shorter in the female, joints 2 and 3 equal in length, the two together longer than 4. Prothorax subcylindrical, much longer than broad, slightly widening from the middle forwards, convex in front; the hind angles very narrowly, acutely produced, divergent, finely unicarinate, the carina near the margin; the surface densely, very finely punctate. Elytra elongate, a little wider than the prothorax at the base, convex in front, slightly rounded at the sides, narrowing from about the basal third to the apex, the

apices truncate and armed at the outer angle with a short, fine, acute tooth; punctate-striate, the interstices almost flat and closely punctate. Beneath densely, very finely punctate; fifth ventral segment rounded at the apex.

Length 5–5⅔, breadth 1⅛–1¼ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 2500 feet (*Champion*).

Nine examples. This species closely resembles the Colombian *P. linearis*, Cand., and *P. longicollis*, Steinh., the types of which are before me. From the first-mentioned it differs in having the outer apical angles of the elytra acuminate, as well as in its smaller size, narrower shape, &c.; and from the latter in the shorter third joint of the antennæ (this joint being as long as the fourth in *P. longicollis*), the shorter and anteriorly convex thorax, and the less elongate elytra. This insect, like the preceding, is unknown to Dr. Candèze.

## Group **CRYPTOHYPNINI.**

### HYPNOIDUS.

*Hypolithus,* Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829) (nec Dejean, 1829).
*Hypnoidus,* Stephens, Illustr. Brit. Ent., Mandib. iii. p. 260 (1830) (part.); Bergroth, Ent. Nachr. xix. p. 308 (1893); Horn, Ent. News, v. p. 7 (1894).
*Crypohypnus,* Eschscholtz, in Silberm. Rev. Ent. iv. tab. (1836).
*Cryptohypnus,* Candèze, Monogr. Elat. iii. p. 55 (part.); Schiödte, Nat. Tidsskr. (3) iii. p. 519 (1865) [Translation in Ann. & Mag. Nat. Hist. (3) xviii. p. 333]; Horn, Trans. Am. Ent. Soc. xviii. p. 1 (part.) (nec Thomson).
*Cryphthypnus,* Kiesenwetter, Naturg. Ins. Deutschl. iv. p. 357 (1858).
*Negastrius,* Thomson, Skand. Col. vi. p. 110 (1864).
*Zorochrus,* Thomson, loc. cit. p. 116.

The Central-American species here referred to *Hypnoidus* agree in having the mesothoracic epimera not reaching the coxæ, the cavities being closed externally by the meso- and metasternum, and the prosternal sutures arcuate and evidently convergent behind. In *Cryptohypnus*, Thoms. (= *Hypolithus*, Schiödte), the mesothoracic epimera reach the coxæ, and the prosternal sutures are almost parallel; it contains various palæarctic and nearctic forms of comparatively large size, and is not represented within our limits.

The North-American species of Cryptohypnini have been exhaustively monographed by Dr. Horn; he has detected important male-characters in some of them, viz. the presence of a densely punctured and thickly pubescent spot or fovea on the first or second ventral segment, or on the middle of the prosternum, a peculiarity to be found in several of the new species here described.

Not a single representative of the genus is contained in the extensive collections formed by MM. Sallé and Höge, and it is probable that several Mexican species remain to be discovered; one, however, was found long ago at Teapa by Pilate. The Central-American forms belong to two groups, the first of which includes *H. cucullatus*,

Horn, *H. canescens*, and *H. guatemalensis*, and the second *H. obliquatulus* (Melsh.), *H. pectoralis* (Say), and several new species described below; to the second group also belong the South-American *Crytohypnus oberthüri*, *C. atomus*, and *C. æqualis*, Cand., and *C. nivalis*, Fairm.

The genus *Hypnoidus* is very widely distributed, and contains a large number of species. They are chiefly found on the sandy shores of rivers and lakes, under stones, or at the roots of plants.

*a*. Elytra striate, immaculate.
  *a'*. Prothorax produced in the middle in front, the hind angles carinate.
    *a''*. Outer elytral striæ well defined . . . . . *cucullatus*.
    *b''*. Outer elytral striæ obliterated . . . . . *canescens*.
  *b'*. Prothorax truncate in the middle in front, the hind angles not carinate; outer elytral striæ obliterated . . . . . *guatemalensis*.
*b*. Elytra confusedly punctured, without trace of striæ, usually maculate *; hind angles of the prothorax with a short carina.
  *c'*. Upper surface shining or moderately shining; prothoracic punctuation fine.
    *c''*. Hind angles of the prothorax rather long, distinctly divergent.
      *a'''*. Elytra testaceous, with a common post-median fascia or diamond-shaped mark, the suture, and sometimes a scutellar patch, infuscate. *teapensis*.
      *b'''*. Elytra each with a broad ante-median fascia, narrowing inwards, and an apical spot, neither reaching the suture, flavous . . . . *quadriplagiatus*.
    *d''*. Hind angles of the prothorax short, not or very feebly divergent.
      *c'''*. Elytra each with a large, triangular humeral patch and an oval apical spot flavous . . . . . *tetraspilotus*.
      *d'''*. Elytra each with two rather large flavous spots on the disc . . . . *quadrisignatus*.
      *e'''*. Elytra each with, at most, a narrow oblique median fascia towards the sides, and sometimes a faint apical spot, testaceous or flavous; prothorax piceous, with the disc paler . . . . . *mexicanus*.
  *d'*. Upper surface rather dull; prothoracic punctuation more distinct; hind angles of the prothorax short and feebly divergent . . . . . *pectoralis*.

1. **Hypnoidus cucullatus.** (Tab. XVIII. figg. 13; 13 *a*, underside of the prothorax.)

*Cryptohypnus cucullatus*, Horn, Trans. Am. Ent. Soc. xviii. p. 17 (1891) [1].
*Hypnoidus cucullatus*, Horn, Ent. News, v. p. 7 [2].

Oblong-oval, rather broad, convex, opaque, the elytra slightly shining; black, the anterior margin of the prothorax sometimes rufescent in the centre, the elytra brassy, the first three joints of the antennæ usually partly testaceous, the legs testaceous, with the femora more or less infuscate in the middle; the prothorax with a large, well-defined patch of silvery pubescence on either side at the base, the elytra somewhat thickly, and the rest of the upper surface sparsely, clothed with fine decumbent yellowish-cinereous pubescence, and also with scattered semierect whitish hairs, which are long and somewhat conspicuous on the elytra; the under surface thickly clothed with yellowish-cinereous pubescence. Head broad and flattened, densely, very finely punctate, the eyes small; antennæ slender, feebly serrate, moderately

* Dark varieties occur of some of the species.

long, the joints longer than broad. Prothorax as long as broad, very convex, subparallel behind, arcuately narrowing from the middle forwards; the apex broadly and arcuately produced in the middle, projecting over the basal portion of the head; the anterior angles strongly and acutely produced in front; the hind angles acute, not divergent, sharply unicarinate, the carina almost straight and extending forwards to beyond the middle; the surface closely, very finely punctate, and sparsely, finely granulate on the declivous lateral portions and at the base, very coarsely and closely granulate along the middle of the disc, the coarsely granulate space widening anteriorly. Elytra about twice the length of the prothorax, and wider than it at the base, arcuately narrowing from the basal third, the humeri obtuse; deeply striate, the striæ without distinct punctures, the interstices convex, and closely, very finely punctate. Beneath closely and finely, the prosternum more sparsely, punctate, the latter granulate in front and with a short obtuse lobe; prosternal sutures curved, and slightly converging posteriorly, the prosternum disconnected from the propleuræ for the greater part of its length.

Length 3–3¾, breadth 1⅛–1½ millim.

*Hab.* North America, Utah and Texas [1].—Guatemala, San Gerónimo in Vera Paz, and Rio Naranjo (*Champion*).

Nine specimens, one of which has been examined by Dr. Horn *. In the vestiture of the upper surface and the form and sculpture of the thorax this and the following species resemble the South-American *Monadicus mobiliceps* and *M. bilæsus*, Cand. The longer semierect hairs are only visible in fresh specimens. The pubescence appears whiter when the insect is viewed in a particular light; the silvery patch near the hind angles of the thorax is conspicuous. The coarsely granulate space on the disc of the thorax is elongate-triangular in shape and somewhat sharply defined, the sculpture on the rest of the surface being very much finer.

There is no trace in any of the specimens of a closely punctured space on the second ventral segment, a distinctive mark of the males of the allied *H. canescens*. The prosternum in both species is freely movable in front, it being disconnected from the propleuræ anteriorly.

## 2. **Hypnoidus canescens.**

Oblong-oval, rather broad, moderately convex, opaque, the elytra slightly shining; black, the elytra with a brassy lustre, the basal three joints of the antennæ, partly or entirely, and the legs flavo-testaceous; the head and a large patch on either side of the base of the prothorax thickly clothed with whitish or silvery pubescence, the rest of the prothorax sparsely, and the elytra and under surface thickly, clothed with a short, fine, yellowish- or fulvo-cinereous pubescence, which in some specimens becomes whitish towards the sides of the elytra. Head broad and flattened, densely, very finely punctate, the eyes small; antennæ slender, feebly serrate, moderately long. Prothorax as long as broad, very convex, arcuately narrowing from the middle forwards, the sides feebly sinuate behind; the apex arcuately produced in the middle, projecting over the basal portion of the head; the anterior angles acutely produced in front; the hind angles acute, feebly divergent, and unicarinate, the carina almost straight and extending forwards to beyond the middle; the surface closely, very finely punctate on the declivous lateral portions and at the base, finely granulate on the middle of the disc. Elytra scarcely twice the length of the prothorax, and of the same

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* There is a specimen of this insect in the British Museum labelled "*Cryptohypnus indicus*, Motsch., E. Ind., ex Jekel." *C. indicus* was described by Motschulsky in 1858, in the seventh volume of his 'Études,' p. 57, from Burma: to judge from his diagnosis, it is very doubtful if the American insect belongs to the same species.

width at the base, arcuately narrowing from about the basal third, slightly flattened on the disc; deeply striate, the striæ without distinct punctures, the seventh, eighth, and ninth obsolete, the interstices feebly convex, and closely, very finely punctate. Beneath closely and very finely, the prosternum sparsely, punctate, the latter granulate in front; the prosternum disconnected from the propleuræ for the greater part of its length. Second ventral segment with a rounded, slightly depressed, densely punctured, thickly pubescent space in the centre in the male.

Length $1\frac{2}{3}$–$2\frac{1}{4}$, breadth $\frac{2}{3}$–$\frac{7}{8}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Panajachel, Pantaleon, Guatemala city, San Gerónimo (*Champion*).

Numerous examples. Closely allied to the preceding, but smaller; the thorax less coarsely granulate on the disc; the elytra narrower and less convex, with the outer striæ obliterated and the interstices flatter. The insect is widely distributed in Guatemala, between elevations of from 1000 to 5000 feet; specimens were obtained at Panajachel, on the shores of the lake of Atitlan, and on the sandy banks of streams elsewhere.

### 3. **Hypnoidus guatemalensis.**

Oblong-oval, narrow, convex, opaque, the elytra slightly shining; black, the elytra with a brassy lustre; the antennæ piceous, with the second and third joints, and the lower side of the first, flavo-testaceous; the legs flavo-testaceous, the femora infuscate in the middle beneath; above and beneath sparsely clothed with a very short, fine, cinereous pubescence, the prothorax apparently with a denser patch of pubescence near the hind angles. Head flattened, densely, very finely punctate, the eyes small; antennæ slender, feebly serrate, moderately long. Prothorax about as long as broad, arcuately converging from the middle forwards, the sides slightly sinuate before the base, the apex truncate in the middle, the anterior angles acute; the hind angles acute, slightly divergent, and not carinate; the surface densely, very finely punctate, finely granulate on the anterior part of the disc, with traces of a smooth median line behind. Elytra about twice the length of the prothorax, and not wider than it at the base, gradually narrowing from about the middle; rather deeply striate, the striæ without distinct punctures, the seventh and eighth nearly obsolete, the interstices almost flat, and closely, minutely punctate. Beneath finely and densely punctured; the prosternum more sparsely punctate, finely granulate in front.

Length $2\frac{1}{8}$, breadth $\frac{3}{4}$ millim.

*Hab.* GUATEMALA, Pantaleon (*Champion*).

One specimen. This insect closely resembles *H. canescens*, but it is narrower and more parallel; the thorax has the apex truncate in the middle, and the hind angles are not carinate.

### 4. **Hypnoidus teapensis.** (Tab. XVIII. fig. 15.)

Oblong, feebly convex, slightly shining, finely pubescent; testaceous or flavo-testaceous, the elytra with a common diamond-shaped mark at one-third from the apex—extending narrowly along the suture to the base and apex, and in one specimen outwardly to the lateral margin,—and sometimes a large, triangular scutellar patch also, fuscous or piceous. Head closely, finely punctate; antennæ slender, feebly serrate. Prothorax broader than long, moderately convex, rounded at the sides, the latter strongly sinuate before the base; the hind angles rather long, acute, divergent, and unicarinate, the carina short and almost straight; the surface closely, finely punctate, with a smooth median line. Elytra nearly three times the length of the prothorax, and wider than it, narrowing from the middle; closely, finely punctate, without trace of striæ. Beneath densely and very finely, the prosternum more sparsely, punctate. Prosternum with an oblong closely punctured spot in the middle in the male.

Length 3–$3\frac{1}{4}$, breadth 1 millim. (♂ ♀.)

*Hab.* Mexico, Teapa in Tabasco (*Pilate, in coll. Janson; H. H. Smith*).

Three specimens. This insect is very like the typical form of *H. pectoralis* (Say); but it has the thorax strongly sinuate at the sides behind, with the hind angles acute, longer, and more divergent, and the punctuation a little finer, and the elytra somewhat differently coloured. It is larger and more elongate than any of the other allied Central-American species. The single male example received is very immature.

5. **Hypnoidus quadriplagiatus.** (Tab. XVIII. figg. 17; 17*a*, underside of the prothorax, ♂.)

Oblong, moderately convex, shining; testaceous, the scutellum infuscate; the elytra black or piceous, each with a very broad antemedian fascia, narrowing inwardly, and an oval apical patch, neither reaching the suture, testaceous; beneath ferruginous, the prothorax flavous; above and beneath very finely and sparsely pubescent. Head closely, finely punctate; antennæ slender, feebly serrate, about reaching the hind angles of the prothorax. Prothorax broader than long, transversely convex, about equal in width in front and behind, rounded at the sides, the latter strongly sinuate before the base; the hind angles acute and moderately divergent, unicarinate, the carina short and almost straight; the surface closely and finely punctate, and with a smooth median line. Elytra about two and one-half times the length of the prothorax, and considerably wider than it at the base, slightly flattened on the disc, arcuately narrowing from the middle; closely and finely punctate, without trace of striæ. Beneath closely and very finely, the prosternum more sparsely and coarsely, punctured. Prosternum with a narrow, oblong, slightly depressed, densely punctured space in the middle in the male.

Length $2\frac{1}{2}$–$2\frac{2}{3}$, breadth $\frac{7}{8}$–1 millim. (♂ ♀.)

*Hab.* Guatemala, Rio Naranjo (*Champion*).

Eight specimens, from the sandy banks of the Rio Naranjo, on the Pacific slope and not far from the Mexican frontier. This species closely resembles *H. tetraspilotus*, but it is much larger, the hind angles of the thorax are more divergent, the metasternum is closely punctured throughout, and the prosternal depression in the male is shallower and oblong in shape; the elytral markings, too, are different, the subtriangular lateral patch being placed considerably below the base. These markings extend to the lateral margin, but not to the suture; the fascia is sometimes reduced in size, forming an oblique mark.

6. **Hypnoidus tetraspilotus.** (Tab. XVIII. figg. 18; 18*a*, underside of the prothorax, ♂.)

Oblong, moderately convex, shining; testaceous or rufo-testaceous, the prothorax sometimes piceous or pitchy-red, with the disc paler; the elytra black or piceous, with a large triangular patch at the sides in front and an oval mark at the sides at the apex, the latter sometimes extending to the suture behind, testaceous or yellowish (these markings leaving a common subtriangular scutellar patch and a broad postmedian fascia, connected at the suture and extending along it almost to the apex, of the ground-colour); the antennæ and legs testaceous; the under surface brownish-testaceous; above and beneath very finely and sparsely pubescent. Head closely, finely punctate; antennæ slender, feebly serrate, about reaching the hind angles of the prothorax. Prothorax broader than long, transversely convex, about equal in width in front and behind, rounded at the sides, the latter sinuate before the base; the hind angles acute and feebly divergent, unicarinate, the carina short and almost straight; the surface closely, very finely punctate, and with a smooth median line. Elytra about two and one-third times the length of the prothorax,

and very little wider than it at the base, slightly flattened on the disc, arcuately narrowing from the middle; closely and very finely punctate, without trace of striæ. Beneath closely, minutely punctate, the pro- and metasternum much smoother along the centre. Prosternum with a small, densely punctured fovea in the middle in the male.

Length $1\frac{2}{3}$–$1\frac{3}{4}$, breadth $\frac{1}{2}$–$\frac{3}{5}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Paraiso (*Champion*).

Fourteen examples, from the vicinity of the Pacific coast, and all attracted to light (in company with some very minute Dytiscidæ), probably from the banks of a small stream in the neighbourhood.

This minute species is allied to *H. quadrisignatus*; but it is much smaller and less elongate, the elytral spots are lateral (one being basal and the other apical), the punctuation is finer, and the metasternum is much more sparsely punctured. The markings are constant.

### 7. **Hypnoidus quadrisignatus.** (Tab. XVIII. fig. 19.)

Oblong, moderately convex, shining; black, piceous, or pitchy-brown, the prothorax sometimes entirely testaceous or paler in the middle; the elytra each with two testaceous or yellowish spots on the disc—one, large and subtriangular, before the middle, the other, oval or rounded, smaller, towards the apex; the antennæ and legs testaceous; the under surface reddish-brown; above and beneath very finely and sparsely pubescent. Head closely, very finely punctate; antennæ slender, feebly serrate, about reaching the hind angles of the prothorax, joint 3 slightly shorter than 2. Prothorax broader than long, transversely convex, about equal in width in front and behind, rounded at the sides, the latter sinuate before the base; the hind angles acute, slightly divergent, and sharply unicarinate, the carina short and almost straight; the surface closely, very finely punctate, and with a smooth median line. Elytra about two and one-half times the length of the prothorax, and slightly wider than it at the base, flattened on the disc, arcuately narrowing from the middle; very finely and closely punctured, without trace of striæ. Beneath closely, very finely punctate, the prosternum sparsely punctured. Prosternum with a densely punctured fovea in the middle in the male.

*Var.* The upper surface entirely black or piceous.

Length 2–$2\frac{1}{2}$, breadth $\frac{3}{4}$–$\frac{7}{8}$ millim. (♂ ♀.)

*Hab.* PANAMA, Tolé (*Champion*).

Found in abundance on the sandy banks of a river near Tolé. The colour is variable, but in most of the specimens the spots are well-defined. Allied to *H. obliquatulus* (Melsh.). The elytra are a little more flattened than in *H. quadriplagiatus*, &c.

### 8. **Hypnoidus mexicanus.** (Tab. XVIII. fig. 20.)

*Cryptohypnus mexicanus*, Fleut. Ann. Soc. Ent. Belg. 1895, p. 171 [1].

*Hab.* MEXICO [1]; GUATEMALA, Paso Antonio (*Champion*).

Numerous examples of this insect were found on the banks of a lagoon near the Pacific coast of Guatemala. *H. mexicanus* closely resembles the N.-American *H. obliquatulus* (Melsh.), but it is narrower, the disc of the thorax is yellowish, and the hind angles of the latter are a little less divergent; the elytra sometimes have a narrow transverse or oblique fascia towards the sides at about the middle, and a faint spot on

the disc before the apex, testaceous; the male has a small densely punctured fovea in the middle of the prosternum. From *H. pectoralis*, var. *inops* (Lec.), specimens of which are sometimes similarly coloured, the present insect seems to differ in the less distinct punctuation of the thorax, the more shining surface, and the more convex shape. The punctuation of the metasternum is sparser than in *H. quadrisignatus*. We are indebted to M. Fleutiaux for the loan of his type, which was found in Paris in imported Mexican tobacco.

### 9. **Hypnoidus pectoralis.**

*Elater pectoralis*, Say, Trans. Am. Phil. Soc. vi. p. 173 (1836) [1]; Complete Writings, ii. p. 608 [2].
*Cryptohypnus pectoralis*, Lec. Trans. Am. Phil. Soc. new ser. x. p. 488 [3]; Cand. Monogr. Elat. iii. p. 89 [4]; Horn, Trans. Am. Ent. Soc. xviii. p. 27 [5].
*Hypnoidus pectoralis*, Horn, Ent. News, v. p. 7 [6].
*Cryptohypnus futilis*, Lec. Trans. Am. Phil. Soc. new ser. x. p. 488 [7]; Cand. Monogr. Elat. iii. p. 91 [8].
*Cryptohypnus inops*, Lec. loc. cit. p. 488 [9]; Cand. loc. cit. p. 91 [10].

*Hab.* North America [1–4], Massachusetts to California [5 7–10], Arizona [5], and Texas [5]. —Mexico, Northern Sonora (*Morrison*).

The Sonoran specimens belong to the 'subvariety' of the variety *futilis*, Lec., described by Horn [5].

## ARRHAPHES.

*Arhaphes*, Candèze, Monogr. Elat. iii. p. 98 (1860).
*Arrhaphes*, Candèze, Cat. Méthod. Elat. p. 120 (1891).
*Phorotarsus*, Motschulsky, Bull. Mosc. 1861, 1, p. 120.
*Hemirrhaphes*, Candèze, Compt. Rend. Soc. Ent. Belg. xxi. p. cxli (1878).

This genus contains nine described species, all from the warmer parts of the Old World—Ceylon, India, Burmah, Java, and Sumatra each furnishing one or more representatives; and to these must now be added one from Central America. Dr. Candèze states that the tarsi are simple in *Arrhaphes*; but in his typical species, *A. diptychus*, from Ceylon, the types of which are before me, the third and fourth joints, as noted by Motschulsky and as in the American species here described, are narrowly lamellate. The obliteration of the prosternal sutures is even more complete in *A. americanus* than in *A. diptychus*, as in the latter they are indicated anteriorly by a faint carina, of which there is no trace in *A. americanus*.

### 1. **Arrhaphes americanus.** (Tab. XVIII. figg. 22; 22 *a*, maxillary palpus; 22 *b*, anterior tarsus.)

Moderately elongate, convex, shining, finely pubescent; testaceous, the prothorax usually with a more or less distinct median vitta—sometimes extending to the greater part of the disc—fuscous or piceous; the elytra with a large, triangular scutellar patch—in some specimens extending to the humeri and in others almost obliterated—and a transverse median fascia—sometimes extending forwards along the suture and joining the scutellar patch, and sometimes reduced to a spot on the middle of the disc,—piceous or black;

the antennæ and legs flavo-testaceous. Head thickly and somewhat coarsely punctate, with a short, smooth, longitudinal carina on the vertex; antennæ slender, feebly serrate, about half the length of the body in the male, shorter in the female, joints 2 and 3 subequal in length, 4–11 moderately elongate. Prothorax very convex, nearly as long as broad, about equal in width at the base and apex, rounded at the sides, the latter strongly sinuate before the base; the anterior angles acute and rather prominent; the hind angles acute, divergent, and unicarinate, the carina very short; the surface thickly punctured, the punctures finer than those on the head, canaliculate down the middle from the base to the apex. Elytra about two and one-half times the length of, and much wider than, the prothorax, subparallel to the middle, and arcuately narrowing thence to the apex; closely, confusedly punctate, without trace of striæ. Beneath closely and finely, the pro- and metasternum very sparsely, punctate.

Length $3\frac{3}{4}$–$4\frac{1}{4}$, breadth $1\frac{2}{5}$–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Teapa (*Pilate, in coll. Janson*); GUATEMALA, Las Mercedes, Cerro Zunil, Zapote (*Champion*); PANAMA, Bugaba, Tolé (*Champion*).

Eleven examples, varying considerably in the extent of the dark markings on the thorax and elytra. The median vitta on the thorax is well-defined in some specimens and obliterated in others; the basal patch on the elytra is sometimes obsolete, and the median fascia reduced to a spot on the disc. In one specimen the basal patch is connected with the median fascia at the suture and at the sides, so as to enclose a large spot of the ground-colour on each elytron. A specimen from Zapote is figured.

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The following genus is of doubtful position. It will probably have to be included in the group Agrypnini.

### AGRYPNELLA.

Head very deeply sunk into the prothorax; the front broad, flattened, and extending beyond the labrum, separated from the anterior margin of the head; apical joint of the maxillary palpi moderately stout, obliquely truncate at the tip; antennæ short, the basal joint very stout, the other joints rather slender and feebly serrate, 2 longer than 3; prothorax trisinuate at the base, truncate in the middle in front, the anterior angles deflexed, the hind angles obliquely truncate and not carinate, the sides somewhat explanate and abruptly separated from the propleuræ; scutellum large, broad-oval; elytra rather short, with the base deeply and obliquely sinuate-emarginate on either side for the reception of the hind angles of the prothorax; prosternum moderately broad in front, with a broad, prominent chin-piece, which is limited behind by a transverse groove, the sutures single and obliquely converging, the prosternal process moderately long, subangular at the tip; propleuræ with a sharp carina extending almost parallel with the margin from opposite the middle of the lower portion of the eye to the base, and with a space along the inner side of the carina from the apex to the middle slightly hollowed for the reception of a portion of the antenna; mesosternum abruptly declivous, notched in the middle in front, the cavity extending into the metasternum; middle coxæ widely separated; posterior coxal plates very broadly and abruptly widened at the middle, becoming exceedingly narrow outwards; tarsi filiform, simple, the basal joint not so long as the following two joints united, the claws simple; vestiture of the body squamiform.

This genus includes two small species—*Cryptohypnus squamifer*, Cand., which is widely distributed in Tropical America, including the Antilles, and the insect from the Amazons described below *. It possesses very remarkable characters, some of which

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* **Agrypnella eburnea.**

Apparently fuscous, completely covered with whitish scales; a large spot on the disc of the prothorax at the base, excised in front and behind, an oblique angulate mark on the outer part of the disc of each elytron

are common to the Agrypnini and others to the Cryptohypnini; but the genus cannot be included in either of these groups as at present defined. It differs from the Agrypnini in the prominent frontal plate and feeble antennal grooves, and from the Cryptohypnini in the very much narrower prosternum and the carinated and shallowly grooved propleuræ. The propleural carina is distant from the margin throughout: in some genera of the group Cardiophorini the carina incompletely separating the propleuræ from the pronotum is also placed beneath, but in this case it extends inwards from the hind angles *. The hind angles of the thorax are formed very much as in various species of *Lacon* and *Meristhus*, near which the genus should probably be placed. *A. squamifera* lives under stones on the sandy banks of rivers.

1. **Agrypnella squamifera.** (Tab. XVIII. figg. 21; 21 *a*, underside of the prothorax; 21 *b*, prosternal process.)

*Cryptohypnus squamifer*, Cand. Elat. Nouv. i. p. 38 (1864) [1]; Fleut. Ann. Soc. Ent. Fr. 1891, p. 283 [2].
*Agrypnus pedicularius*, Dej. Cat. 3rd edit. p. 100 [3].
*Agrypnus pictus*, Buquet, in litt. (fide Dej. Cat.) [4].

*Hab.* Guatemala, Rio Naranjo (*Champion*); Nicaragua, Ometepe (*ex Wickham*); Panama, Tolé (*Champion*).—South America, Venezuela [2], Cayenne [3 4], Santarem, Ega, Pará [1], Peru, Monte Video; Antilles, Grenada.

One specimen only has been found at each of the three Central-American localities quoted. Numerous South-American examples are contained in the Janson collection, including Candeze's type from Pará and two from Cayenne from the Dejean collection. The scales in fresh specimens completely hide the sculpture. Our figure is taken from the Guatemalan example.

## Group **CARDIOPHORINI.**

To the chief characters given for this group, viz. the heart-shaped scutellum, and the short, wedge-shaped, truncated prosternal process, it may be noted that the anterior coxal cavities are partly or almost entirely closed behind by the prothoracic epimera, instead of being widely open as in the Cryptohypnini. The prosternal process has a brush of long hairs at the inner apical angle.

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beyond the middle, and a small dot midway between this and the apex, fuscous, the three inner interstices of the elytra each with a line of ochraceous scales down the centre, the fourth, fifth, and sixth interstices also with a line of similarly coloured scales at the base; beneath paler than above, the legs and antennæ testaceous. Head and prothorax thickly punctured; the prothorax broader than long, rounded at the sides, widest at the middle, the hind angles obliquely truncate. Elytra oval, broader than the prothorax; punctate-striate, the outer interstices convex.

Length $3\frac{1}{10}$, breadth $1\frac{1}{4}$ millim.

*Hab.* Amazons, Santarem (*Bates, in coll. Janson*). One specimen.

* In *Cardiophorus mirabilis*, Cand., from India, which should probably form the type of a new genus, the carina is complete and distant from the margin throughout.

## CARDIOPHORUS.

*Cardiophorus,* Eschscholtz, in Thon's Archiv, ii. 1, p. 34 (1829); Candèze, Monogr. Elat. iii. p. 106.
*Caloderus,* Stephens, Illustr. Brit. Ent., Mandib. iii. p. 269 (1830).
*Dicronychus,* Brullé, Expéd. Scient. de Morée, Anim. Artic. p. 138 (1832) (nec Castelnau, nec Germar).
*Gauroderus,* Thomson, Skand. Col. i. p. 104 (1859).

This widely distributed genus contains a large number of species, but it is almost absent from Tropical America, where it is replaced by *Aptopus*, *Triplonychus*, *Horistonotus*, and *Esthesopus*. In the New World *Cardiophorus* apparently does not extend south of the Mexican States of Vera Cruz and Guerrero *. The four species here enumerated from Mexico may be separated thus:

*a*. Claws strongly toothed at the base; elytral interstices convex; prothorax with distinct basal sulci . . . . . *aptopoides.*
*b*. Claws simple.
  *a'*. Elytra coarsely and deeply punctate-striate; prothorax with distinct basal sulci.
    *a''*. Elytral interstices very convex; length 6½–7½ millim. . . . . *brevis.*
    *b''*. Elytral interstices moderately convex; length 5–6 millim. . . . . *vulneratus.*
  *b'*. Elytra finely and shallowly punctate-striate, the interstices almost flat; prothorax without distinct basal sulci . . . . . *mexicanus.*

### 1. **Cardiophorus aptopoides.** (Tab. XIX. fig. 2, ♂.)

*Cardiophorus aptopoides,* Cand. Elat. Nouv. i. p. 64 (1864), v. p. 47 nota (1893) (part.) [1].

α. The prothorax rufous, with a black patch of variable size on the disc; the elytra each with an orange-yellow submarginal vitta. (Fig. 2.)

*Hab.* Mexico, Ventanas in Durango (*Höge*), Cuernavaca in Morelos (*Sallé*, *H. H. Smith*), Yautepec in Morelos (*Höge*), Chilpancingo in Guerrero (*Höge*, *H. H. Smith*), Tepetlapa and Amula in Guerrero (*H. H. Smith*), Sinaloa [1].

β. The prothorax rufous, with a large black patch on the disc, the black sometimes extending to the greater part of the surface; the elytra entirely black.

*Hab.* Mexico, Chilpancingo (*Höge*, *H. H. Smith*), Tepetlapa and Cuernavaca (*H. H. Smith*).

γ. The prothorax and elytra entirely black.

*Hab.* Mexico, Chilpancingo (*Höge*, *H. H. Smith*).

It is possible, as stated by Dr. Candèze [1], that the form of the tarsal claws is variable in *C. aptopoides*; but it seems to me to be very doubtful if such is the case, and the

* *C. humeralis*, Fairm., from Chili, belongs probably to another genus.

name *aptopoides* is here retained solely for the form with dentate claws. This insect varies greatly in the colour of the upper surface, the typical examples having an orange-yellow submarginal vitta on each elytron. It has been collected in plenty in all its varieties at Chilpancingo, unaccompanied by *C. brevis*.

A specimen from Chilpancingo of the typical form is figured.

### 2. **Cardiophorus brevis.** (Tab. XIX. fig. 3, var.)

*Cardiophorus aptopoides*, Cand. Elat. Nouv. i. p. 64 (part.) [1].

*a*. The prothorax rufous, with a large black patch on the disc not extending to the base; the elytra each with an orange-yellow or flavous submarginal vitta.

*Hab.* MEXICO, Mazatlan (*coll. Janson, ex Candèze*), Presidio (*Forrer*), Acapulco (*Höge*), Sinaloa [1].

*β*. The prothorax as in *a*, but with the black more extended, sometimes leaving only a spot at the hind angles rufous; the elytra entirely black. (Fig. 3.)

*Aptopus brevis*, Cand. Ann. Soc. Ent. Belg. 1889, p. 111 (Elat. Nouv. iv. p. 45) [2].
*Cardiophorus devectus*, Cand. Elat. Nouv. v. p. 47 (1893) [3].

*Hab.* MEXICO, Presidio (*Forrer*).

*γ*. The prothorax and elytra entirely black.

*Hab.* MEXICO, Presidio and Ventanas (*Forrer*), Acapulco (*Höge*), Sierra Madre de Chihuahua [3], Sinaloa [2].

The specimens referred to *C. brevis*, for a type of which we are indebted to Dr. Candèze, have the claws simple. The colour-varieties correspond exactly to those of *C. aptopoides*, *C. brevis* answering to the var. *γ* of that insect. The genitalia of the male are similarly formed in both. *C. brevis* has been received in numbers from Presidio and Acapulco, unaccompanied by *C. aptopoides*. A specimen from Presidio of the var. *β* is figured.

### 3. **Cardiophorus vulneratus.** (Tab. XIX. fig. 4, ♂.)

*Horistonotus vulneratus*, Horn, Trans. Am. Ent. Soc. xii. p. 35 (1884) (nec Cand. *) [1].

*Hab.* NORTH AMERICA, Arizona (*Morrison* [1]).—MEXICO, Northern Sonora (*Morrison.*

We have received five specimens of this species, two of which were examined some years ago by Dr. Horn. *C. vulneratus* is extremely like the var. *β* of *C. brevis*; but it is considerably smaller, the thorax is a little more coarsely and closely punctured, and the elytral interstices are not so convex. The insect clearly belongs to *Cardiophorus*, the incomplete carina separating the pronotum from the propleuræ being placed far below the lateral margin of the prothorax.

* *C. vulneratus*, Cand., from Burma [Ann. Mus. Genova, xxvi. p. 682 (1888)], requires a new name.

### 4. Cardiophorus mexicanus.

Moderately elongate, rather convex, slightly shining; brassy black, the elytra pitchy-brown, with the suture and sides castaneous; the antennæ black, with the basal joint reddish at the tip; the legs piceous, with the base of the femora, the knees, and the tarsi paler; the under surface black; above and beneath thickly clothed with short, fine, cinereous pubescence. Head very closely, finely punctate; antennæ slender, short, extending a little beyond the humeri, joints 3 and 4 subequal, 3 much longer than 2. Prothorax convex, slightly broader than long, rounded at the sides, narrowed in front and behind; the hind angles moderately produced, not divergent, with a short faint lateral carina; the surface very closely and finely punctured throughout; the base feebly incised on either side. Elytra moderately elongate, slightly narrowed in front, and there scarcely wider than the base of the prothorax, and narrowing from a little beyond the middle to the apex, somewhat acuminate behind; finely and shallowly punctate-striate, the punctures not very closely placed, the interstices almost flat, thickly and very minutely punctate. Beneath very closely and finely punctured; the propleuræ separated from the pronotum at some distance from the margin by a very faint carina which extends three-fourths the length of the prothorax. Claws simple.

Length $7\frac{1}{3}$, breadth $2\frac{1}{4}$ millim. (♂.)

*Hab.* Mexico, Jalapa (*Höge*).

One example. Allied to *C. floridæ*, Cand., from which it differs in having the thorax shorter and more rounded at the sides, and the elytra very finely punctate-striate, with the interstices almost flat.

## APTOPUS.

*Aptopus*, Eschscholtz, in Thon's Archiv, ii. 1, p. 32 (1829) (part.); Candèze, Monogr. Elat. iii. p. 230*.

*Aptopus*, which may be easily known from its allies by the strongly pectinate tarsal claws, is one of the most characteristic genera of Elateridæ in Mexico, extending northwards to Texas and southwards to Brazil. With one exception, the species are all American. It agrees with *Cardiophorus* in having the carina separating the pronotum from the propleuræ placed beneath and abbreviated in front. The Central-American species, which all belong to Dr. Candèze's Sect. I., appear to be in a plastic condition, and they are very difficult to distinguish. *A. lateralis*, Er., is one of the most variable Elaterids known to me.

*a*. Prothorax with more or less distinct intermixed larger punctures.
  *a'*. Hind angles not or feebly divergent . . . . . Species 1–8.
  *b'*. Hind angles divergent . . . . . Species 9.
*b*. Prothorax without intermixed larger punctures.
  *c'*. Hind angles not or feebly divergent.
    *a''*. Body moderately elongate . . . . . Species 10–12.
    *b''*. Body elongate . . . . . Species 13.
  *d'*. Hind angles distinctly divergent; body elongate, narrow . . . . . Species 14.

* The typical species briefly described by Eschscholtz, *A. ephippiger*, from Bahia, and *A. tibialis*, from Brazil, are not mentioned by Candèze.

### 1. **Aptopus pruinosus.** (Tab. XIX. figg. 1, ♂; 1 *a*, genitalia.)

*Cardiophorus pruinosus*, Erichs. in Germar's Zeitschr. für Ent. ii. p. 329 (1840) [1].
*Aptopus pruinosus*, Cand. Monogr. Elat. iii. p. 232 [2].

*Hab.* Mexico [1], Tacambaro in Michoacan, Jalapa and Playa Vicente in Vera Cruz, Oaxaca (*Höge*), Orizaba (*coll. Janson*), Tuxtla in Vera Cruz [2], Etla, Juquila, and Panistlahuaca in Oaxaca (*Sallé*), Tepetlapa in Guerrero (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); Guatemala, Zapote and San Gerónimo (*Champion*).

Collected in plenty at Jalapa by Herr Höge and at Zapote by myself. This is the largest and most robust species of the genus. The antennæ in the male are nearly half the length of the body (less elongate in some specimens), shorter in the female. The thorax is transverse in both sexes, and rather closely punctured, with coarser punctures intermixed. The elytral interstices are moderately convex and somewhat thickly punctured. Fresh specimens are thickly clothed with rather coarse silvery or yellowish-cinereous pubescence, which is easily abraded. Some of the specimens from San Gerónimo, Juquila, and Panistlahuaca are doubtfully referred to this species, but I am unable to separate them. A typical male from Tepetlapa is figured.

### 2. **Aptopus collaris.** (Tab. XIX. fig. 5, ♂.)

Elongate, robust, shining, somewhat sparsely clothed with long yellowish-cinereous pubescence; piceous, brown, or reddish-brown, the prothorax, except at the base and apex, rufous or obscure rufous, the antennæ ferruginous, the legs ferrugineo-testaceous. Head densely, finely punctate, dull; the frontal carina sharply raised and obliquely declivous on either side, truncate in the middle; antennæ slender, fully one-half the length of the body in the male, shorter in the female. Prothorax broader than long, considerably wider at the base than at the apex; the sides rounded and converging from the middle forwards, rather strongly sinuate behind in the male, feebly so in the female; the hind angles moderately produced; the surface closely, finely punctate, the punctures becoming more scattered and more unequal in size on the middle of the disc, and usually more or less distinctly canaliculate behind; the base with a rather long deep sulcus on either side. Elytra about three and one-fourth times the length of the prothorax, and much wider than it, the sides a little rounded and gradually converging from about the basal third to the apex in the male, more parallel in the female, the humeri rounded; punctate-striate, the interstices moderately convex, flat on the disc in some specimens, and somewhat thickly punctured. Beneath closely, finely punctate, the metasternum with distinct intermixed coarser punctures.
Length $10\frac{1}{2}$–13, breadth 3–$3\frac{3}{4}$ millim.

*Hab.* Guatemala, near the city (*Salvin*), Dueñas and San Gerónimo (*Champion*), Chimaltenango (*Conradt*).

Ten specimens. This insect is very closely allied to *A. pruinosus*, of which it may be a colour-variety. The males apparently have longer antennæ than in the corresponding sex of *A. pruinosus*. None of the Mexican specimens of that species show any tendency to a similar coloration of the thorax. A male from Dueñas is figured.

### 3. **Aptopus longipennis.**

Elongate, rather narrow, somewhat sparsely clothed with long yellowish-cinereous pubescence; brown, the head and prothorax a little darker in colour than the elytra; beneath piceous; the antennæ piceous, with the first joint and the base of each of the others ferruginous; the legs fusco-ferruginous. Head rather sparsely, unequally punctate; antennæ slender, extending to about the basal fourth of the elytra. Prothorax broader than long, a little wider at the base than at the apex, rounded at the sides, the latter feebly sinuate behind; the hind angles rather short; the surface somewhat sparsely, unequally punctate, the punctuation becoming a little closer towards the sides, the intermixed finer punctures less numerous than the larger ones on the middle of the disc; the base with a short deep sulcus on either side. Elytra three and one-half times the length of the prothorax, and much wider than it, subparallel to the middle and gradually narrowing thence to the apex; finely punctate-striate, the interstices feebly convex, flatter on the disc, and sparsely punctate. Beneath closely and finely punctured, the metasternum with conspicuous intermixed coarser punctures.

Length $9\frac{1}{2}$, breadth $2\frac{3}{4}$ millim. (♀.)

*Hab.* GUATEMALA, Totonicapam 10,000 feet (*Champion*).

One specimen. This species resembles *A. pruinosus* and its allies, but differs from all of them in its relatively very elongate elytra and rather narrow shape. The mixed punctuation of the thorax and metasternum and the non-divergent thoracic hind angles distinguish it from *A. campylinus*.

### 4. **Aptopus longicollis.**

Elongate, shining, somewhat sparsely clothed with long yellowish-cinereous pubescence; piceous-brown, or obscure castaneous with the sides or the sutural region of the elytra broadly darker; the antennæ and legs ferrugineo-testaceous, the antennæ sometimes darker. Head thickly punctured; antennæ slender, half the length of the body in the male, a little shorter in the female. Prothorax nearly or quite as long as broad in the male, shorter in the female, moderately rounded at the sides, narrowing a little in front and behind, the sides feebly sinuate before the base; the hind angles moderately produced; the surface sparsely, finely punctate, with intermixed slightly finer punctures; the base with a short deep sulcus on either side. Elytra elongate, much wider than the prothorax, subparallel to the middle and narrowing thence to the apex, the humeri rounded; deeply punctate-striate, the striæ rather coarsely punctured, the interstices convex and sparsely punctate. Beneath densely, very finely punctate, with scattered coarser punctures intermixed.

Length $10\frac{1}{4}$–$11\frac{3}{4}$, breadth 3–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Amula in Guerrero (*H. H. Smith*), Jalapa (*Höge*), Panistlahuaca and Juquila in Oaxaca (*Sallé*).

This insect is very closely allied to *A. pruinosus*; but when males of each from the same localities are compared it is evident that the thorax in *A. longicollis* is more elongate (considerably broader than long in the male of *A. pruinosus*) and more sparsely punctate; the elytral interstices are also less thickly punctured. The females, however, are scarcely separable.

### 5. **Aptopus rufomarginatus.** (Tab. XIX. fig. 6.)

Elongate, broad, robust, flattened above, shining, somewhat thickly clothed with yellowish-cinereous pubescence; black, the elytra with the sides from immediately below the humeri to the apex broadly rufous; the antennæ and legs piceous, the tarsi obscure ferruginous. Head rather sparsely punctate;

antennæ slender, extending to a little beyond the humeri. Prothorax broader than long, wider at the base than at the apex, the sides subparallel behind and gradually, arcuately converging from the middle forwards; the hind angles short; the surface rather sparsely, finely punctate, with intermixed coarser punctures; the base with a short deep sulcus on either side. Elytra moderately elongate, much wider than the prothorax, subparallel to the middle and narrowing thence to the apex, flattened on the disc, the humeri rounded; finely punctate-striate, the interstices moderately convex at the sides, flat on the disc, and somewhat thickly punctured. Beneath closely, finely punctate, with distinct intermixed coarser punctures on the middle of the ventral segments and on the metasternum; fifth ventral segment subtruncate and feebly emarginate at the apex.

Length 12, breadth $3\frac{2}{3}$ millim.

*Hab.* Mexico, Chiapas (*Sallé*).

One specimen, no doubt a female. This insect is of about the same size and build as *A. pruinosus*. It is flattened above; the elytra are broadly rufous at the sides, finely punctate-striate, with the interstices almost flat on the disc; the legs and antennæ are infuscate. In the coloration of the elytra *A. rufomarginatus* resembles the vittate form of *A. vicinus*, from which it differs in many respects. The emargination of the fifth ventral segment may be due to accidental circumstances.

### 6. **Aptopus chiriquensis.**

Moderately elongate, robust, shining, somewhat sparsely clothed with yellowish-cinereous pubescence; pitchy-black, piceous, brown, or reddish-brown, the antennæ and legs ferruginous. Head somewhat sparsely, finely punctate; antennæ slender, about half the length of the body in the male, shorter in the female. Prothorax considerably broader than long in both sexes, wider at the base than at the apex, moderately rounded at the sides, the latter feebly sinuate behind; the hind angles rather short; the surface sparsely, finely, unequally punctate, the punctuation becoming excessively fine towards the base; the base with a short sulcus on either side. Elytra moderately long, much wider than the prothorax, slightly rounded at the sides, narrowing from about the basal third to the apex; deeply punctate-striate, the interstices convex and sparsely punctate. Beneath closely, finely punctate, the metasternum with a few intermixed coarser punctures.

Length $8\frac{1}{4}$–$9\frac{1}{2}$, breadth $2\frac{2}{3}$–3 millim. (♂ ♀.)

*Hab.* Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui (*Champion*).

Found in plenty by myself in Chiriqui. This insect resembles *A. pruinosus*, *A. collaris*, &c., from which it differs in having the head and thorax more sparsely punctured, the elytra less parallel, and the pubescence sparser.

### 7. **Aptopus vicinus.** (Tab. XIX. fig. 8, ♂.)

Moderately elongate, rather narrow, shining, somewhat sparsely pubescent; pitchy-black, piceous, or brown; the antennæ and legs ferruginous. Head rather sparsely punctate; antennæ slender, half or more than half the length of the body in the male, shorter in the female. Prothorax in the male very little wider at the base than at the apex, and nearly as long as broad, shorter in the female, moderately rounded at the sides, the latter feebly sinuate behind; the hind angles rather short; the surface somewhat closely, finely, unequally punctate; the base with a deep sulcus on either side. Elytra moderately long, much wider than the prothorax, slightly rounded at the sides, gradually narrowing from about the basal third to the apex; deeply punctate-striate, the interstices convex and sparsely punctate. Beneath closely, finely punctate, the metasternum with a few intermixed coarser punctures.

*Var.*? The elytra with a broad submarginal rufous or fulvous vitta extending from the shoulder to the apex.

Length $6\frac{3}{4}$–9, breadth 2–$2\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, near the city, and Chinautla (*Salvin*), Dueñas (*Salvin*, *Champion*), Zapote, San Gerónimo (*Champion*), Tecpan (*Conradt*).

Found in plenty at Dueñas and Zapote. This insect is perhaps nothing more than a local form of *A. chiriquensis*, from which it differs in being less robust and narrower. The males have the thorax nearly as long as broad and very little wider at the base than at the apex, and the antennæ very elongate. Some of the Zapote specimens have the thorax more closely punctured. The variety is represented by three examples from San Gerónimo, where also the typical form was obtained. *A. vicinus* may be known from pallid examples of *A. lateralis*, var. *concolor*, by the more elongate antennæ in the male, as well as by the ferruginous legs and antennæ.

A typical male from Dueñas is figured.

8. **Aptopus lateralis.** (Tab. XVIII. figg. 23; 24, var. β; 25, var. γ, *basalis*; 26, var. ε; 27, var. ζ.)

*Cardiophorus lateralis*, Erichs. in Germar's Zeitschr. für Ent. ii. p. 330 (1840) [1].

*Aptopus lateralis*, Cand. Monogr. Elat. iii. p. 233, t. 4. figg. 4, 4 *a* [2].

α. The prothorax rufous, with a black median vitta; the elytra black, each with a testaceous or rufo-testaceous mark at the base; the legs piceous or black. (Fig. 23.)

*Hab.* Mexico [1] [2] (*coll. Janson*), Puebla and Cuernavaca (*Sallé*), Cholula, Matamoros Izucar, and Atlixco in Puebla, Mexico city (*Höge*).

β. The prothorax entirely rufous; the elytra as in α; the legs varying in colour from black to testaceous. (Fig. 24.)

*Aptopus lateralis*, Cand., var. *a*, loc. cit.[3]

*Hab.* Mexico [3] (*coll. Janson*), Durango city, Matamoros Izucar in Puebla, Tacambaro in Michoacan (*Höge*), Puebla, Cuernavaca, Guanajuato (*Sallé*), Chilpancingo in Guerrero (*Höge*, *H. H. Smith*), Tepetlapa in Guerrero (*H. H. Smith*).

γ. The prothorax black; the elytra as in α; the legs piceous or black. (Fig. 25.)

*Cardiophorus basalis*, Erichs. in Germar's Zeitschr. für Ent. ii. p. 330 [4].

*Hab.* Mexico [4] (*coll. Janson*), Cuernavaca (*Sallé*, *H. H. Smith*), Chilpancingo (*Höge*).

δ. The prothorax black; the elytra testaceous, with the suture broadly, and sometimes the sides also, black; the legs brownish or black.

*Hab.* Mexico, Guanajuato (*Sallé*).

ε. The prothorax black; the elytra reddish-brown or testaceous, the suture sometimes very narrowly black; the legs brownish or black. (Fig. 26.)

*Hab.* Mexico, Durango city (*Höge*), Puebla, Cuernavaca, and Cordova (*Sallé*), Chilpancingo (*Höge*, *H. H. Smith*).

ζ. The prothorax rufous; the elytra as in δ; the legs brownish or black. (Fig. 27.)

*Hab.* Mexico, Guanajuato (*Sallé*).

η. The prothorax rufous, with the base and apex black; the elytra testaceous, with the suture narrowly, and sometimes the sides also, black; the legs piceous.

*Hab.* Mexico, Guanajuato (*Sallé*).

θ. The prothorax, and sometimes the head also, rufous or rufo-testaceous; the elytra entirely testaceous or rufo-testaceous; the legs brownish or testaceous.

*Cardiophorus spadiceus,* Erichs. in Germar's Zeitschr. für Ent. ii. p. 331 [5].
*Aptopus spadiceus,* Cand. Monogr. Elat. iii. p. 232 [6].

*Hab.* Mexico [6] (*coll. Janson, ex Candèze*), Villa Lerdo in Durango, Chilpancingo (*Höge*), Amula in Guerrero (*H. H. Smith*), Jalapa [5].

ι. The prothorax and elytra entirely black; the legs black or piceous.

*Cardiophorus concolor,* Erichs. in Germar's Zeitschr. für Ent. ii. p. 329 [7].
*Aptopus concolor,* Cand. Monogr. Elat. iii. p. 233 [8].

*Hab.* Mexico [8] (*coll. Janson*), Durango city, Matamoros Izucar, Morelia in Michoacan (*Höge*), Puebla, Guanajuato, Cuernavaca, Oaxaca (*Sallé*), Chilpancingo and Amula in Guerrero (*H. H. Smith*).

Upwards of one hundred examples have been examined of this very variable species. I follow Candèze in adopting the name *lateralis* for it, in preference to *basalis*, which would be much more applicable. Many of the varieties occur at the same localities, at Guanajuato, Chilpancingo, Cuernavaca, &c., and there can be little doubt that they belong to one species. As in *A. pruinosus*, the punctures on the thorax are unequal in size, and in some specimens they are finer and more scattered than in others. The antennæ are usually entirely piceous or black, but sometimes the basal one or two joints are ferruginous or testaceous; in some examples of the var. *spadiceus* they are entirely ferruginous. The females have the thorax broader and more rounded at the sides (in some specimens as wide as the elytra), and the antennæ shorter, than the males.

*A. lateralis* is a little more cylindrical in shape than most of the allied forms. The punctuation of the under surface is close and fine, and on the metasternum there are coarser intermixed punctures. Erichson's descriptions appear to have been made in each case from single examples; his types (which I have not seen) are contained in the Berlin Museum. The insect is widely distributed over the Mexican plateau, from Durango southwards to Vera Cruz and Guerrero.

We figure five specimens: a typical example from Cholula; a specimen of each of the vars. β, γ (*basalis*), and ε, from Chilpancingo; and one of the var. ζ from Guanajuato.

### 9. **Aptopus erichsoni.** (Tab. XIX. figg. 9, ♂; 9 *a*, genitalia.)

Elongate, rather broad, moderately shining, sparsely clothed with long, fine, greyish pubescence; reddish-brown, piceous, or pitchy-black, the antennæ and legs varying in colour from ferrugineo-testaceous to piceous,

the antennæ with the basal joint sometimes ferruginous in the dark specimens. Head densely, finely punctate; antennæ slender, about half the length of the body in the male, slightly shorter in the female. Prothorax convex, slightly broader than long, a little wider at the base than at the apex, rounded at the sides, the latter sinuate before the base; the hind angles distinctly divergent; the surface closely finely punctate, with slightly coarser punctures intermixed; the base with a short deep sulcus on either side. Elytra moderately elongate, considerably wider than the prothorax, subparallel to about the middle and narrowing thence to the apex, the humeri rounded; deeply and coarsely punctate-striate, the interstices convex and sparsely punctured. Beneath densely and finely punctate, with slightly coarser punctures intermixed.

Length $9\frac{1}{4}$–$11\frac{1}{3}$, breadth 3–$3\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo in Guerrero, Jalapa in Vera Cruz (*Höge*).

Fifteen specimens. This insect is of about the same size and shape as *A. pruinosus*, but differs from it in having the thorax more sinuous at the sides behind, with the hind angles distinctly divergent; the genitalia of the males are also differently formed.

A male from Chilpancingo is figured.

### 10. **Aptopus uniformis.**

Moderately elongate, feebly shining, rather sparsely clothed with long, fine, yellowish-cinereous pubescence; piceous, brown, or reddish-brown, the elytra in one specimen much paler than the prothorax; the antennæ and legs testaceous or ferruginous. Head closely, finely punctate; antennæ slender, half the length of the body in the male, shorter in the female. Prothorax slightly broader than long, wider at the base than at the apex, rounded at the sides, the latter feebly sinuate before the base; the hind angles rather short; the surface very closely, finely, uniformly punctate; the base with a deep sulcus on either side. Elytra moderately long, considerably wider than the prothorax, subparallel to near the middle and narrowing thence to the apex; deeply punctate-striate, the interstices convex and sparsely punctured. Beneath closely, finely, uniformly punctate.

Length $6\frac{3}{4}$–$8\frac{1}{2}$, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀).

*Hab.* Mexico, Chilpancingo in Guerrero (*H. H. Smith*), Guanajuato (*Sallé*).

Five specimens. This species may be chiefly distinguished amongst its allies by the close, fine, uniform punctuation of the thorax. *A. uniformis* is allied to *A. peregrinus*, Horn, from Texas, a specimen of which is before me, but differs from it in having the thorax still more closely punctured, with the hind angles less divergent. It is less elongate than *A. omiltemanus*.

### 11. **Aptopus constrictus.**

Moderately elongate, shining, somewhat sparsely clothed with yellowish-cinereous pubescence; piceous, the scutellum, the suture, and an indeterminate vitta on each elytron extending from the shoulder downwards reddish-brown; the antennæ ferruginous, the legs ferrugineo-testaceous. Head closely punctured; antennæ slender, half the length of the body in the male, a little shorter in the female. Prothorax broader than long, about equal in width at the base and apex, moderately rounded at the sides in the male, strongly so in the female, the sides feebly sinuate before the base; the hind angles rather short; the surface closely, uniformly, and very minutely punctate; the base with a short incision on either side. Elytra moderately long, much wider than the prothorax, subparallel to the middle in the male, more rounded at the sides in the female; coarsely and deeply punctate-striate, the interstices convex throughout and sparsely punctured. Beneath closely, finely, uniformly punctate.

Length 7–$7\frac{1}{4}$, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Amula 6000 feet and Omilteme 8000 feet, both in Guerrero (*H. H. Smith*).

A male from Amula and a female from Omilteme. Allied to *A. uniformis*, but differing therefrom in having the thorax more narrowed behind (the base and apex being about equal in width), very minutely punctured, and with the basal sulci reduced to a short incision on either side. The female, which is broader and more robust than the male, differs from the same sex of *A. uniformis* in having more oval elytra.

### 12. **Aptopus fuscipes.**

Moderately elongate, shining, cinereo-pubescent, piceous, the antennæ and legs fuscous. Head closely, finely punctate; antennæ slender, extending to a little below the humeri. Prothorax slightly broader than long, a little wider at the base than at the apex, rounded at the sides, the latter feebly sinuate before the base; the hind angles short; the surface closely, finely punctate, the punctuation becoming slightly finer towards the base; the base with a long, deep sulcus on either side. Elytra moderately long, much wider than the prothorax, subparallel to the middle and narrowing thence to the apex; very deeply punctate-striate, the interstices strongly convex throughout and sparsely punctured. Beneath closely, finely punctate, without intermixed coarser punctures.

Length $7\frac{1}{2}$, breadth $2\frac{1}{2}$ millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

One specimen, in mutilated condition, resulting from the corrosion of the pin. This insect closely resembles the Mexican *A. lateralis*, var. *concolor*, but is easily separable from it by the uniform punctuation of the head, thorax, and under surface, there being no trace of intermixed larger punctures. The punctuation of the thorax is distinctly sparser and coarser than in *A. uniformis*. The specimen described is the only representative of the genus we have received from Nicaragua.

### 13. **Aptopus omiltemanus.**

Elongate, moderately shining, rather sparsely clothed with long, fine, fulvo-cinereous pubescence; brown or reddish-brown above, darker beneath, the antennæ and legs testaceous or ferrugineo-testaceous. Head closely, finely punctate; antennæ slender, half the length of the body in the male, shorter in the female. Prothorax slightly broader than long, broader and more convex in the female than in the male, a little wider at the base than at the apex, feebly rounded at the sides, the latter slightly sinuate before the base; the hind angles a little divergent; the surface closely, finely, uniformly punctate; the base with a short sulcus on either side. Elytra elongate, in the male about one-half, and in the female considerably, wider than the prothorax, flattened on the disc, subparallel to the middle and narrowing thence to the apex; deeply striate, the striæ rather finely punctured, the interstices convex, flatter towards the suture, and sparsely, finely punctate. Beneath densely, finely punctate, with widely scattered intermixed slightly coarser punctures on the metasternum and on the middle of the ventral segments.

Length $8\frac{2}{3}$–11, breadth $2\frac{1}{3}$–$3\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Two males and one female. In this species the thorax in the male is very narrow compared with the elytra, the latter being elongate and flattened. The female closely resembles the male of *A. erichsoni*, but may be known from it by its narrower and

more parallel shape, the slightly shorter antennæ, the less divergent hind angles of the thorax, and the flatter elytra, the striæ of the latter more finely punctured. The elytra in the male are relatively broader than in the same sex of *A. campylinus*.

### 14. **Aptopus campylinus.** (Tab. XIX. fig. 11, ♂.)

*Cardiophorus campylinus,* Erichs. in Germar's Zeitschr. für Ent. ii. p. 333 [1].
*Aptopus campylinus,* Cand. Monogr. Elat. iii. p. 234, t. 4. figg. 5, 5 *a* [2].
*Cardiophorus decumanus,* Erichs. loc. cit. p. 332 [3].
*Cardiophorus linearis,* Erichs. loc. cit. p. 332 [4].

*Hab.* Mexico [1–4] (*coll. Janson*), Santa Clara in Chihuahua (*Höge*), San Andres Tuxtla (*Sallé*).

I have seen seven examples only of this species—three (♂) of a small black form (two from San Andres Tuxtla and one in the Janson collection), which Candèze describes under the name of *campylinus*; three (♂) of a much larger, brownish or reddish-brown form (one from Santa Clara, from which our figure is taken, and two in the Janson collection), belonging to his var. *d*; and one (♀), black, with the elytra fuscous (from the Laferté collection). It seems to be as variable as its allies. The largest specimens measure 9 millim. The synonymy is given on Dr. Candèze's authority.

## TRIPLONYCHUS.

*Triplonychus,* Candèze, Monogr. Elat. iii. p. 236 (1860).

A genus containing about a dozen described species, all from Tropical South America. Three are now added from Central America. In two of these, as in *T. cingulatus*, Cand., from Venezuela, the fourth tarsal joint is sublamellate, and the tarsal claws are bicuspid, the basal tooth being obsolete. *Triplonychus* is chiefly distinguished from *Horistonotus* by the irregular double series of punctures on the elytra, these replacing the true striæ. *T. trivittatus* has the fourth tarsal joint dilated; it will probably have to be separated from this genus.

Claws tricuspid; fourth tarsal joint simple; antennæ short; alternate elytral interstices sharply carinate before the apex . . . . . *carinatus.*
Claws bicuspid; fourth tarsal joint sublamellate; antennæ elongate; alternate elytral interstices costate or subcostate before the apex.
  Fourth tarsal joint dilated . . . . . *trivittatus.*
  Fourth tarsal joint narrow . . . . . *parvulus.*

### 1. **Triplonychus carinatus.** (Tab. XIX. fig. 7.)

Very convex, moderately elongate, shining, finely and sparsely pubescent; black, with a brassy lustre, the elytra brown, indeterminately testaceous at the base and apex; the antennæ black, with the two basal joints rufo-testaceous; the legs testaceous, the femora in great part piceous; beneath black, the last two ventral segments testaceous at the apex. Head thickly, finely punctate, the vertex with a shallow depression in the middle; antennæ slender, short, not nearly reaching the base of the prothorax. Pro-

thorax very convex, as long as broad, rounded at the sides from the middle forwards, gradually and obliquely narrowing behind; the hind angles rather obtuse; the surface thickly, finely punctate, the disc smoother in the middle behind, deeply canaliculate before the base; the base incised on either side near the hind angles. Elytra less than twice the length of, and narrower than, the prothorax, narrowing from the base; with irregular double series of fine punctures, the interstices smooth and strongly costate to a little beyond the middle, the third, fifth, seventh, and ninth very sharply and acutely carinate thence to the apex. Beneath closely, finely punctate. Claws tricuspid.

Length $4\frac{1}{2}$, breadth $1\frac{1}{2}$ millim.

*Hab.* Panama, San Feliz in Chiriqui (*Champion*).

One specimen, probably a female. Allied to *T. costatus* and *T. lebasi*, Cand., from Tropical South America. The thorax is much more convex than in *T. lebasi*, and the elytral carinæ are very sharply raised.

### 2. **Triplonychus trivittatus.** (Tab. XIX. fig. 10, ♂.)

Moderately elongate, narrow, slender, shining, somewhat sparsely clothed with fine yellowish-cinereous pubescence; testaceous, the head with a subtriangular or transverse patch on the vertex, in some specimens extending over the greater part of the front, black or piceous; the prothorax with a broad median vitta and a stripe on either side extending from the base to near the apex, the marginal stripe widening anteriorly and in some specimens connected with the median vitta before and behind the middle, black or piceous; the scutellum fusco-testaceous or piceous; the elytra with the suture narrowly and the sides to a greater or less extent fuscous or piceous, the marginal stripe sometimes extending inwards at the middle and at the apex so as to partly enclose two oblong patches of the ground-colour on each elytron; beneath piceous, sometimes in great part testaceous; the antennæ piceous or brown, with the two basal joints testaceous, in some specimens entirely testaceous; the legs flavo-testaceous. Head closely, finely punctate, obsoletely sulcate in the middle behind; antennæ slender, rather more than half the length of the body. Prothorax broader than long, moderately convex, very little wider at the base than at the apex, rounded at the sides, the latter sinuate behind; the hind angles rather short; the surface closely, finely, uniformly punctate; the base sinuate and bi-incised on either side. Elytra about two and two-thirds longer than the prothorax, and a little wider than it at the base, feebly rounded at the sides, narrowing from the basal third to the apex, the humeri rounded; sulcate, the sulci with irregular double series of fine punctures, separated by convex, sparsely punctured interspaces, the alternate ones becoming costate before the apex. Beneath closely, very finely punctate. Fourth tarsal joint dilated and excavate above for the reception of the fifth joint. Claws bicuspid.

Length $4\frac{1}{2}$–6, breadth $1\frac{1}{4}$–$1\frac{3}{4}$ millim. (♂.)

*Hab.* Nicaragua, Chontales (*Belt*); Panama, Bugaba, San Feliz, Tolé (*Champion*).

Found in numbers by myself in Chiriqui; a single specimen only has been received from Chontales. They appear to be all males. In this and the following species the claws are bicuspid, as in *Horistonotus exoletus* and its allies; the fourth tarsal joint is more or less dilated and sublamellate, as in *Esthesopus*; and the elytra are sculptured as in *Triplonychus*, that is to say they have irregular double series of punctures, separated by raised interspaces. The present species resembles *T. plagiatus*, Er., from Pará, but it is a great deal smaller than that insect and much more finely punctured.

A male from Bugaba is figured.

### 3. **Triplonychus parvulus.** (Tab. XIX. fig. 13, ♂.)

Moderately elongate, narrow, slender, shining, finely pubescent; the head and prothorax black or piceous, the

front of the former and the anterior margin and hind angles of the latter testaceous or rufo-testaceous; the scutellum fusco-testaceous or piceous; the elytra testaceous or flavo-testaceous, with the suture, and the sides broadly from a little below the shoulder to about the middle and narrowly thence to the apex, piceous; beneath in great part piceous; the antennæ black or piceous, with the two basal joints paler; the legs flavo-testaceous. Head closely, finely punctate, depressed in the middle in front in some specimens; antennæ slender, about two-thirds the length of the body. Prothorax broader than long, about equal in width at the base and apex, widest a little before the middle, the sides rounded anteriorly and strongly sinuate behind; the hind angles rather narrow; the surface closely, finely, uniformly punctate; the base bi-incised on either side. Elytra nearly three times the length of the prothorax, and wider than it at the base, slightly rounded at the sides, narrowing from about the basal third, the humeri rounded; sulcate, the sulci with irregular double rows of fine punctures, the interspaces convex and with a few scattered punctures, the alternate ones becoming subcostate before the apex. Beneath closely, finely punctate. Fourth tarsal joint sublamellate. Claws bicuspid.

Length $3\frac{1}{4}$–$3\frac{3}{4}$, breadth $\frac{7}{8}$–1 millim. (♂.)

*Hab.* GUATEMALA, El Tumbador, Las Mercedes, and Cerro Zunil (*Champion*).

Eight specimens, all from the Pacific slope, and from elevations between 3000 and 5000 feet. Smaller, narrower, and more slender than *T. trivittatus*, the thorax with the anterior margin and hind angles only testaceous, the fourth tarsal joint less dilated. The elytra are similarly coloured.

A male from Las Mercedes is figured.

## HORISTONOTUS.

*Horistonotus*, Candèze, Monogr. Elat. iii. p. 243 (1860); Cat. Méthod. Elat. p. 135 (1891).

Amongst the Tropical-American Cardiophorini this genus is the most numerous in species, and it is also well represented in the Southern States of North America. Twenty are now recorded from within our limits, fifteen of which are described as new. They belong to four well-defined groups, easily separable by the form of the tarsal claws. The first two would perhaps be better treated as generically distinct. The tarsal claws in the first group, which includes *H. exoletus* and its allies, are bicuspid, and also dilated towards the base; they are formed exactly as in some of the species of *Triplonychus*, i. e. *T. cingulatus*, Cand., *T. trivittatus*, and *T. parvulus*. The single species of the second group, *H. dilaticornis*, differs from all the others in the form of the front and antennæ, as well as in the form of the claws. In one species of the third group, *H. apterus*, the body is not winged, this insect approaching very closely the genus *Coptostethus*.

*a*. Claws bicuspid, the teeth subequal in length; prothorax with the base bi-incised on either side, the punctuation mixed; antennæ slender; frontal carina prominent; scutellum concave.

*a'*. Alternate elytral interstices costate before the apex.

*a''*. Elytra narrowing almost from the base.

*a'''*. Elytra deeply punctate-striate; the interstices convex throughout . *exoletus*.

*b'''*. Elytra shallowly and finely punctate-striate; the interstices feebly convex or almost flat on the anterior half . . . . . *pedestris*.

*b*''. Elytra more parallel in front, narrowing from about the middle; the interstices convex throughout . . . . . *rufiventris.*

*b*'. Alternate elytral interstices not costate before the apex . . . . . *hæmorrhoidalis.*

*b*. Claws bicuspid, the inner tooth very short and fine; prothorax with a single short deep sulcus on either side at the base, the punctuation mixed; antennæ very elongate, the joints from the third dilated; frontal carina deflexed in the middle; scutellum concave . . . . . *dilaticornis.*

*c*. Claws sharply or rectangularly dilated from the middle to the base; frontal carina prominent; antennæ slender.

*c*'. Prothorax without notches or sulci at the base, the punctuation mixed; scutellum convex or feebly convex; prothorax and elytra subparallel towards the base.

*c*''. Prothorax with the base sinuous on either side, the larger intermixed punctures becoming much coarser on the anterior half, fine at the base . . . . . *obliteratus.*

*d*''. Prothorax with the base subtruncate on either side, the larger intermixed punctures becoming coarser towards the sides and base, those in the transverse basal depressions very coarse and conspicuous . . *truncatus.*

*d*'. Prothorax with a long sulcus on either side at the base, the punctuation mixed; scutellum concave; elytra narrowing almost from the base, the apical interstices costate, the apices obtuse . . . . . *sulcifer.*

*e*'. Prothorax with a shorter sulcus on either side at the base, the punctuation mixed; scutellum flattened; elytra narrowing from about the middle, the apical interstices not costate, the apices somewhat pointed . . . . *spernendus.*

*f*'. Prothorax bi-incised on either side at the base; scutellum concave or flattened.

*e*''. The prothoracic punctuation mixed; the elytra moderately rounded at the sides, or subparallel towards the base.

*c*'''. Elytra deeply punctate-striate, the interstices more or less convex.

*a*$^{4}$. Antennæ ferruginous or testaceous.

*a*$^{5}$. Upper surface opaque, thickly pubescent; prothorax densely punctured . . . . . *duplicatus.*

*b*$^{5}$. Upper surface more or less shining, more sparsely pubescent; prothorax less densely punctured.

*a*$^{6}$. Prothorax subparallel behind . . . . . *flavipes.*

*b*$^{6}$. Prothorax more or less narrowed behind.

*a*$^{7}$. Elytra unicolorous.

*a*$^{8}$. Prothorax feebly convex, moderately rounded at the sides, the larger intermixed punctures coarse . . . . . *mixtus.*

*b*$^{8}$. Prothorax convex, strongly rounded at the sides, the larger intermixed punctures finer . . . . . *rotundicollis.*

*b*$^{7}$. Elytra with the base to a greater or less extent and a median fascia rufo-testaceous, the markings sometimes reduced to a small basal patch; the intermixed larger punctures on the prothorax distinct only at the apex . . . . . *bicinctus.*

$b^4$. Antennæ pitchy-black; prothorax subparallel behind . . . . . *nigricornis.*

$d'''$. Elytra with rows of coarse punctures placed in shallow striæ, the interstices flat; the head and prothorax densely punctured, the larger punctures coarse and closely placed on the anterior part of the thorax, as well as on the head; prothorax rounded at the sides . *brunneus.*

$f''$. The prothoracic punctuation uniform, fine; the elytra oval or suboval.

$c^4$. Body winged, rufo-testaceous or reddish-brown, the elytra maculate.

$c^5$. Elytra with a transverse dark median fascia, the interstices convex . . . . . *fasciatus.*

$d^5$. Elytra with a common discoidal black patch, the interstices flat towards the suture . . . . . *discoideus.*

$d^4$. Body apterous, brown; elytra short, without definite markings, the interstices convex . . . . . *apterus.*

*d*. Claws simple; prothorax bi-incised on either side at the base, the punctuation mixed; scutellum concave; frontal carina prominent; antennæ slender . . . . . *zunilensis.*

## 1. Horistonotus exoletus.

*Cardiophorus exoletus,* Erichs. in Germar's Zeitschr. für Ent. ii. p. 325 [1].
*Horistonotus exoletus,* Cand. Monogr. Elat. iii. p. 257 [2]; Horn, Trans. Am. Ent. Soc. xii. p. 39 [3].
*Cardiophorus fervidus,* Chevr. Dej. Cat. 3rd edit. p. 104 [4].

*Hab.* North America, S.W. Texas [3].—Mexico [4] (*coll. Janson*), Playa Vicente, Jalapa, Tapachula (*Höge*), Teapa in Tabasco (*Pilate, Höge, H. H. Smith*); British Honduras, Rio Hondo (*Blancaneaux*); Guatemala, Panzos, Teleman, Senahu, Chacoj, Cahabon, and San Gerónimo in Vera Paz, Rio Naranjo, Pantaleon (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia [1 2]; Venezuela; Brazil; Peru [2].

This is the commonest species of the genus within our limits. It varies in colour from rufo-testaceous to piceous or pitchy-black. The elytral interstices are convex throughout, the second, third, fifth, seventh, and ninth being strongly costate before the apex. One of the two specimens from San Gerónimo, a male, is more elongate than usual, and almost black. A male (amongst a large series) from Teapa is also unusually elongate, and has the elytra very coarsely and deeply punctate-striate. The four (♀) specimens from Teleman have the alternate elytral interstices only moderately raised before the apex. All these appear to be nothing more than extreme forms of a widely distributed species.

## 2. Horistonotus pedestris.

*Horistonotus pedestris,* Cand. Elat. Nouv. iii. p. 84 (1881) [1].

*Hab.* Guatemala [1], Capetillo, Cerro Zunil (*Champion*).

We possess three male examples of this species, the type (♂) of which has been communicated by Dr. Candèze. It is closely allied to *H. exoletus,* but has the thorax

more sinuate at the sides behind, and the elytra more finely punctate-striate, the interstices feebly convex or almost flat from the base to the middle, the alternate ones slightly costate before the apex; the antennæ are also more elongate in the male. The colour is equally variable.

### 3. **Horistonotus rufiventris.**

*Horistonotus rufiventris,* Cand. Elat. Nouv. iii. p. 84 (1881)[1].

*Hab.* Mexico, Cosamaloapan in Vera Cruz (*Sallé*); Guatemala[1], Cerro Zunil, San Gerónimo (*Champion*); Nicaragua (*coll. Janson*); Costa Rica (*coll. Janson*); Panama, Volcan de Chiriqui (*Champion*).

Found in numbers at San Gerónimo. Very like *H. exoletus*, but smaller and less elongate; the elytra are more gradually narrowed behind, with the interstices convex throughout, the alternate ones costate before the apex. The type has been communicated by Dr. Candèze; it is considerably larger than most of our specimens, the smallest males measuring only $5\frac{1}{2}$ millim.

### 4. **Horistonotus hæmorrhoidalis.**

Moderately elongate, rather slender, narrow, shining, somewhat thickly clothed with yellowish-cinereous pubesence; piceous or pitchy-black, the anterior margin of the prothorax towards the sides, and sometimes the tips of the hind angles also, rufo-testaceous, the humeri and the apical margin of the elytra indeterminately reddish-brown; beneath paler than above, in some specimens ferruginous, with the sides piceous; the antennæ and palpi testaceous, the legs flavo-testaceous. Head finely punctate, with intermixed coarser punctures; antennæ slender, fully half the length of the body in the male, a little shorter in the female. Prothorax about as long as broad, moderately convex, considerably wider at the base than at the apex, the sides feebly rounded and converging from the middle forwards, and feebly sinuate and slightly converging behind; the hind angles moderately produced; the surface thickly, minutely punctate, with intermixed coarser punctures; the base sinuate and bi-incised on either side. Elytra about two and two-thirds longer than the prothorax, and a little wider than it at the base, distinctly rounded at the sides, narrowing from the basal third to the apex, the humeri rounded externally; deeply punctate-striate, the interstices feebly convex and sparsely punctate. Beneath minutely punctate, with intermixed coarser punctures. Claws bicuspid.

Length $4\frac{3}{4}$–$6\frac{1}{4}$, breadth $1\frac{2}{5}$–$2\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, Senahu, San Juan, and Sinanja in Vera Paz (*Champion*).

Eight specimens, all from the mountain-slopes in the vicinity of the Polochic valley. This species is allied to *H. exoletus*, *H. rufiventris*, &c., from which it differs in its small size and the non-costiform alternate apical interstices of the elytra.

### 5. **Horistonotus dilaticornis.** (Tab. XIX. figg. 12, ♂; 12 *a*, antenna; 12 *b*, prothorax; 12 *c*, claw.)

Elongate, rather narrow, convex, shining, finely and sparsely cinereo-pubescent; testaceous, the apex of the elytra and the last ventral segment slightly infuscate. Head minutely punctate, with much coarser punctures intermixed, broadly depressed in the middle between the eyes, the latter very large, the front declivous, the frontal carina bent downwards in the centre; antennæ more than half the length of the body, the joints from the third opaque and closely punctured, dilated, serrate, and increasing in length, 2 small,

3 triangular, twice the length and twice the width of 2, 11 elongate, a little longer and narrower than 10. Prothorax convex, nearly as long as broad, almost square, slightly narrowed in front, the sides feebly sinuate before the base; the hind angles acute and moderately long; the surface closely, minutely punctate, with scattered coarser punctures intermixed; the base abruptly incised on either side, and with a short deep sulcus extending forwards from it. Elytra nearly three times the length of the prothorax, and wider than it at the base, narrowing from a little below the base to the apex; deeply punctate-striate, the interstices very convex, becoming narrowly costate before the apex, and minutely punctate. Beneath closely, minutely punctate, with scattered coarser punctures intermixed. Claws bicuspid, the inner tooth short and very fine.

Length 7, breadth 2 millim. (♂.)

*Hab.* GUATEMALA, Champerico (*Champion*).

One example. This species differs from all its allies in the form of the antennæ, claws, and front. The base of the thorax has a single notch on either side, from which a short deep sulcus extends forwards.

### 6. **Horistonotus obliteratus.**

Moderately elongate, not very convex, shining, sparsely clothed with fine yellowish-cinereous pubescence; brown or rufo-castaneous, the anterior and hind angles of the prothorax and the base of the elytra rufescent in dark examples; the antennæ ferruginous, the legs testaceous. Head finely punctured, with numerous coarse punctures intermixed; antennæ slender, extending very little beyond the base of the prothorax in the female, longer in the male. Prothorax much broader than long, moderately convex, considerably wider at the base than at the apex, the sides rounded anteriorly and subparallel from the middle to the base; the hind angles rather obtuse, excavated above for the reception of the humeri; the surface closely, minutely punctate, with intermixed scattered coarse punctures, the latter conspicuous on the anterior half and at the sides, becoming finer towards the base; the base sinuate on either side, without trace of notches or sulci. Elytra about two and one-half times the length of the prothorax, and of the same width at the base, slightly flattened on the disc, subparallel to the middle and narrowing thence to the apex, the humeri subangular and somewhat prominent; rather coarsely punctate-striate, the interstices feebly convex, almost flat towards the suture, and sparsely punctured. Beneath very finely, closely punctate, with coarse punctures intermixed. Claws rectangularly dilated from the middle to the base.

Length 5–6¾, breadth 1½–2¼ millim. (♂ ♀.)

*Hab.* MEXICO, Huetamo in Michoacan (*Höge*), Teapa in Tabasco (*coll. Janson*), Yucatan (*Pilate, in coll. Janson*), Temax in North Yucatan (*Gaumer*); GUATEMALA, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*).

Seven specimens, varying greatly in size and colour, the single examples from Teapa and Chontales being very small. This insect closely resembles *Esthesopus humilis*, Cand. (except that there are no coarse punctures at the base of the thorax), and one of the two specimens doing duty for that species in the Janson collection, determined by Candèze himself, belongs to *H. obliteratus*, it having the fourth tarsal joint simple. The present species is nearly allied to the Antillean *H. asthenicus*, Cand., but it is more elongate and more parallel, with the thorax wider in front. The coarse scattered punctures on the thorax are conspicuous on the anterior half and at the sides.

### 7. **Horistonotus truncatus.** (Tab. XIX. figg. 14; 14 *a*, prothorax.)

Moderately elongate, not very convex, shining, sparsely clothed with fine yellowish-cinereous pubescence; pitchy- or reddish-brown, the anterior angles and the base of the prothorax and the base of the elytra indeterminately rufescent or testaceous; the antennæ ferruginous, the legs testaceous. Head finely punctured, with numerous coarse punctures intermixed; antennæ slender, extending to a little beyond the humeri. Prothorax much broader than long, feebly convex, much wider at the base than at the apex, the sides moderately rounded anteriorly and subparallel behind; the hind angles rather short and excavated above for the reception of the humeri; the surface closely, very finely punctate, with intermixed scattered coarser punctures, the latter becoming much coarser towards the sides and base, those in the transverse basal depressions very coarse and conspicuous; the base subtruncate on either side towards the hind angles, without trace of sulci. Scutellum convex. Elytra about two and one-half times the length of the prothorax, and of the same width at the base, slightly flattened on the disc, subparallel to the middle and narrowing thence to the apex, the humeri subangular; rather coarsely punctate-striate, the interstices feebly convex, flatter towards the suture, and sparsely punctured. Beneath very finely, closely punctate, with coarse punctures intermixed. Claws rectangularly dilated from the base.

Length 6, breadth 2 millim.

*Hab.* PANAMA, Bugaba and Caldera in Chiriqui (*Champion*).

Two specimens, probably male and female. Very near *H. obliteratus*, but differing from it in having the thorax subtruncate at the base, with the larger punctures very much finer on the anterior part of the disc, and the coarse ones at the base obsolete, and the scutellum more convex. *H. truncatus* closely resembles *Esthesopus humilis*, and has similar coarse conspicuous punctures at the base of the thorax (those on the anterior part of the disc, however, are very much finer); but may be known from it by the simple fourth tarsal joint, the more transverse thorax, the more coarsely punctured elytral striæ, &c.

### 8. **Horistonotus sulcifer.** (Tab. XIX. figg. 15; 15 *a*, prothorax.)

Rather short, moderately convex, shining, thickly clothed with fine greyish pubescence; piceous or pitchy-black, the anterior angles of the prothorax rufescent, the legs and antennæ testaceous. Head closely, very finely punctate, with scattered intermixed much coarser punctures; antennæ slender, short, about reaching the hind angles of the prothorax. Prothorax slightly broader than long, considerably wider at the base than at the apex, moderately rounded at the sides, narrowed behind; the hind angles rather short; the surface closely, very finely punctate, with scattered intermixed much coarser punctures, canaliculate behind; the base with a long, oblique, and very distinct sulcus on either side. Scutellum concave. Elytra about twice the length of the prothorax, and of the same width at the base, the sides rounded and rapidly narrowing from a little below the base, and distinctly sinuous before the apex, the apices subtruncate; deeply punctate-striate; the interstices convex, almost flat on the basal part of the disc, and becoming about equally costate before the apex, closely, very minutely punctate, with widely scattered coarser punctures intermixed. Beneath similarly punctured. Claws rectangularly dilated from the middle to the base.

Length $5\frac{1}{4}$–$6\frac{1}{4}$, breadth $1\frac{1}{2}$–2 millim.

*Hab.* MEXICO, Tapachula in Chiapas (*Höge*); GUATEMALA, Champerico (*Champion*).

Five specimens, apparently including both sexes, all from the vicinity of the Pacific coast. This species may be known from most of the allied forms by the long oblique sulcus on either side of the thorax at the base. The elytra are short and narrowed from

a little below the base, the interstices costate before the apex. There is a double system of punctuation, above and beneath. The South-American *H. tetraspilotus* (Guér.) and *H. crucifer*, Cand., have similar long oblique sulci on the thorax at the base. A Champerico specimen is figured.

### 9. **Horistonotus spernendus.**

*Cardiophorus spernendus*, Erichs. in Germar's Zeitschr. für Ent. ii. p. 320 [1].
*Horistonotus spernendus*, Cand. Monogr. Elat. iii. p. 261 [2].

*Hab.* MEXICO, Tapachula in Chiapas (*Höge*); GUATEMALA, Yzabal (*Sallé*), San Gerónimo, Zapote, Rio Naranjo (*Champion*); PANAMA, San Feliz in Chiriqui (*Champion*). —COLOMBIA [1 2]; VENEZUELA [2]; AMAZONS, Pará [2].

Ten examples, one or two from each locality. This small species has a well-defined sulcus at the base of the thorax on either side, the base itself subtruncate between this and the broad median lobe.

### 10. **Horistonotus duplicatus.**

Elongate, rather convex, opaque, thickly clothed with yellowish-cinereous pubescence; piceous or brown, the antennæ ferruginous, the legs testaceous, the under surface piceous or reddish-brown. Head densely, finely punctate, with coarse punctures intermixed; antennæ rather slender, short, about reaching the hind angles of the prothorax in the female, a little longer in the male. Prothorax very convex, a little broader than long, not much wider at the base than at the apex in the female, the sides strongly rounded from the middle forwards and gradually and somewhat obliquely converging behind; the hind angles moderately produced; the surface densely, finely punctate, with indistinct intermixed scattered coarser punctures, which extend to the base, canaliculate behind; the base sinuate and bi-incised on either side. Scutellum concave. Elytra two and one-half times the length of the prothorax, and of about the same width at the base, narrowing from the basal third, the humeri rounded; coarsely punctate-striate, the interstices convex and thickly punctured. Beneath densely, very finely punctate, with intermixed coarser punctures. Claws rectangularly dilated from the middle to the base.

Length $5\frac{3}{4}$–$6\frac{3}{4}$, breadth $1\frac{3}{4}$–$2\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* MEXICO, Tapachula in Chiapas (*Höge*).

One pair. This species chiefly differs from its allies in the fine, dense punctuation of the thorax, with scattered coarser punctures intermixed, which are not easily seen till the pubescence is removed. The surface is opaque and thickly pubescent. The sides of the thorax are almost straight, but gradually and obliquely converging, behind. It does not accord with any of the species described by Dr. Horn.

### 11. **Horistonotus flavipes.**

Moderately elongate, rather convex, shining, sparsely clothed with fine yellowish-cinereous pubescence; black, piceous, or obscure reddish-brown, the front of the head and the anterior margin and hind angles of the prothorax sometimes rufescent; the legs and antennæ testaceous. Head sparsely, rather coarsely punctate, with a few fine punctures intermixed; antennæ slender, rather short, extending to a little beyond the humeri. Prothorax convex, broader than long, much wider at the base than at the apex, the sides rounded and converging anteriorly and subparallel behind; the hind angles rather short and excavated above for the reception of the humeri; the surface very finely, somewhat sparsely punctate, with inter-

mixed scattered moderately coarse punctures, which become more distinct towards the sides and apex and do not extend to the basal portion of the disc; the base sinuate and deeply bi-incised on either side. Elytra about two and two-thirds longer than the prothorax, and of the same width at the base, feebly rounded at the sides, widest at about one-third from the base, and narrowing thence to the apex, the humeri rather prominent in front; deeply punctate-striate, the interstices feebly convex, flatter towards the suture, and sparsely punctate. Beneath closely, very finely punctate, with scattered coarser punctures, these latter coarser on the metasternum and first ventral segment than on the other parts. Claws rectangularly dilated from the middle to the base.

Length 6–8½, breadth 2–3 millim. (♂ ♀.)

*Hab.* MEXICO, Cerro de Plumas, Jalapa (*Höge*), Orizaba (*coll. Janson*), Temax in North Yucatan (*Gaumer*); GUATEMALA, Chinautla (*Salvin*), Dueñas, San Gerónimo (*Champion*).

Thirteen examples, varying greatly in size. This insect resembles *H. obliteratus*, but differs from it in having the base of the thorax deeply bi-incised on either side; the larger intermixed punctures on the thorax are also much finer, and the elytra are more rounded at the sides. The simple fourth joint of the tarsi separates it from *Esthesopus hepaticus* and its allies.

### 12. **Horistonotus mixtus.**

Elongate, moderately convex, feebly shining, sparsely clothed with fine yellowish-cinereous pubescence; piceous, the antennæ and legs testaceous. Head finely punctured, with numerous coarse punctures intermixed; antennæ slender, extending slightly beyond the humeri in the female, a little longer in the male. Prothorax slightly broader than long, not very convex, moderately rounded at the sides, not much wider at the base than at the apex, narrowing a little behind; the hind angles rather short; the surface closely, finely punctate, with scattered, very distinct, coarse punctures intermixed; the base sinuate and bi-incised on either side. Elytra two and two-thirds longer than the prothorax, and a little wider than it at the base, slightly rounded at the sides, narrowing from the middle, the humeri rounded; deeply punctate-striate, the interstices feebly convex and somewhat thickly punctured. Beneath closely, very finely punctate, with intermixed coarser punctures, the latter becoming very conspicuous on the propleuræ. Claws broadly rectangularly dilated from the middle to the base.

Length 6½–8⅓, breadth 2¼–2⅔ millim. (♂ ♀.)

*Hab.* MEXICO, Vera Cruz, Yolos in Oaxaca (*Sallé*).

A male from Yolos and a female from Vera Cruz. Allied to *H. duplicatus*, but more sparsely pubescent, less densely punctured, and more shining; the intermixed punctures coarser and much more distinct, those on the propleuræ especially, the antennæ longer, the elytra more rounded at the sides, the thorax less narrowed behind. The female is much smaller than the male, and has more obtuse hind angles to the prothorax.

### 13. **Horistonotus rotundicollis.**

Elongate, robust, moderately shining, sparsely clothed with fine yellowish-cinereous pubescence; piceous, the antennæ ferruginous, the legs ferrugineo-testaceous. Head coarsely but shallowly umbilicate-punctate, with a few fine punctures intermixed, the eyes large and smooth; antennæ slender, extending to a little beyond the humeri. Prothorax convex, considerably broader than long, very little wider at the base than at the apex, the sides strongly rounded from the middle forwards and obliquely converging

behind; the hind angles rather short; the surface thickly, very finely punctate, with slightly coarser punctures intermixed; the base sinuate and bi-incised on either side. Elytra about two and one-third times the length of the prothorax, and of the same width at the base, a little rounded at the sides, narrowing from the middle, the humeri rounded; coarsely punctate-striate, the interstices convex and very sparsely, finely punctate. Beneath closely, very finely punctate, with scattered coarse punctures intermixed. Claws broadly and sharply toothed at the middle.

Length 7, breadth $2\frac{2}{5}$ millim.

*Hab.* MEXICO, Tepetlapa in Guerrero (*H. H. Smith*).

One specimen, probably a female. This insect resembles *H. mixtus*, but it has the thorax more convex, with the sides more rounded and the larger intermixed punctures much finer; the punctures of the elytral striæ are coarser, and the interstices more convex. It is more shining than *H. duplicatus*, with the pubescence sparser and finer, the thorax more rounded at the sides, and more sparsely punctate.

### 14. **Horistonotus bicinctus.** (Tab. XIX. figg. 16, ♂; 16 *a*, prothorax.)

Moderately elongate, not very convex, shining, rather sparsely clothed with fine yellowish-cinereous pubescence; pitchy-black, piceous, or brown, the head rufous in front, the prothorax with the anterio margin or the anterior angles testaceous, the hind angles and the scutellum sometimes of the same colour; the elytra each with a large patch on the disc at the base, sometimes extending completely across, and an angulated fascia beyond the middle, rufo-testaceous or rufous; beneath in great part piceous, reddish at the sides; the legs and antennæ testaceous. Head somewhat coarsely punctate; antennæ slender, more than half the length of the body in the male. Prothorax considerably broader than long, much wider at the base than at the apex, moderately rounded at the sides, somewhat obliquely narrowed in front and behind; the hind angles moderately produced; the surface thickly, very finely punctate, with a few intermixed coarser punctures towards the apex; the base bi-incised on either side. Elytra about two and one-half times the length of the prothorax, and slightly wider than it at the base, distinctly rounded at the sides, narrowing from a little before the middle, the humeri rounded; rather deeply punctate-striate, the interstices feebly convex and minutely punctate. Beneath closely, finely, uniformly punctate. Claws rectangularly dilated from the middle to the base.

Var. *α*. The post-median fascia of the elytra almost obsolete.

Var. *β*. Brown or reddish-brown, the elytra with the base narrowly and indeterminately rufescent.

Length 5–$5\frac{1}{2}$, breadth $1\frac{4}{5}$–2 millim. (♂ ♀.)

*Hab.* GUATEMALA, San Juan in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Twelve specimens—five of the typical form and two of the var. *α* from Vera Paz, and five of the var. *β* from Chiriqui. Allied to the South-American *H. crucifer*, Cand., but without the long sulcus on either side of the base of the thorax. The head and thorax are almost uniformly punctate, the intermixed larger punctures being distinct at the apex only; the punctures on the head, however, are coarser than those on the thorax. A typical male from San Juan is figured.

### 15. **Horistonotus nigricornis.**

Moderately elongate, narrow, shining, sparsely clothed with rather coarse yellowish-cinereous pubescence; pitchy-black, the anterior angles of the prothorax testaceous, the humeri indeterminately brownish; the antennæ pitchy-black; the apical joint of the maxillary palpi piceous, the legs flavo-testaceous. Head

thickly and somewhat finely punctured, with a few minute punctures intermixed; antennæ slender, extending to some distance beyond the humeri. Prothorax about as long as broad, moderately convex, much wider at the base than at the apex, the sides somewhat obliquely converging from the middle forwards and almost parallel behind; the hind angles moderately produced; the surface rather sparsely, minutely punctured, with about an equal number of slightly coarser punctures intermixed; the base sinuate and bi-incised on either side. Elytra two and two-thirds longer than the prothorax, and a little wider than it at the base, distinctly rounded at the sides, and narrowing from the basal third to the apex, the humeri rounded externally; deeply punctate-striate, the interstices feebly convex and sparsely punctate. Beneath minutely punctate, with intermixed coarser punctures. Claws rectangularly dilated from the middle to the base.

Length 4, breadth $1\frac{1}{3}$ millim.

*Hab.* GUATEMALA, Purula in Vera Paz (*Champion*).

One specimen. This inconspicuous species greatly resembles *H. hæmorrhoidalis*, but may be at once known from it by the form of the claws; it is also smaller and less elongate, the antennæ are much shorter and pitchy-black, and the finer intermixed punctures on the thorax are less numerous.

### 16. **Horistonotus brunneus.**

*Horistonotus brunneus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 111 (Elat. Nouv. iv. p. 45) [1].

*Hab.* MEXICO [1].

We have not received a specimen of this very distinct species, the abraded (♂) type of which has been communicated by Dr. Candèze. The punctuation of the head and thorax is dense, the conspicuous larger punctures being closely placed towards the apex of the thorax and on the head. The elytra have rows of coarse punctures placed in very shallow striæ, the interstices being flat and thickly punctate. The thorax is much broader than long, with the base strongly sinuate and bi-incised on either side.

### 17. **Horistonotus fasciatus.** (Tab. XIX. fig. 17, ♂.)

Short, convex, shining, thickly pubescent; rufo-testaceous, the elytra with a rather broad median fascia, extending down the suture to near the apex, black or piceous; the antennæ and legs testaceous. Head closely, somewhat coarsely punctate; antennæ slender, half the length of the body in the male, a little shorter in the female. Prothorax much broader than long, slightly wider at the base than at the apex, rounded at the sides, obliquely narrowed behind; the hind angles moderately produced and rather obtuse; the surface closely, finely, uniformly punctate; the base sinuate and bi-incised on either side. Elytra oval, about two and one-half times longer than the prothorax, and of the same width at the base; deeply punctate-striate, the interstices moderately convex throughout, and minutely punctured. Beneath closely, finely, uniformly punctate. Claws rectangularly dilated from the middle to the base.

*Var.* The elytral markings obliterated.

Length $4\frac{1}{4}$–$4\frac{1}{2}$, breadth $1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* MEXICO, Acapulco (*Höge*).

Ten specimens. Allied to *H. unitinctus*, Cand., from Brazil, but broader, the thorax and elytra more rounded at the sides, the thorax more narrowed behind. As in many other species of the genus, the base of the thorax has two deep notches on either side near the inner limit of the hind angles.

### 18. **Horistonotus discoideus.** (Tab. XIX. fig. 18.)

Moderately elongate, rather convex, shining, sparsely clothed with fine yellowish-cinereous pubescence; reddish-brown or brown, the hind angles of the prothorax paler, the head infuscate in one example; the elytra testaceous or brownish-testaceous, with a large common patch at the middle, and a short marginal stripe opposite to it piceous or pitchy-black, the median patch sometimes extending to the apex or connected laterally with the marginal stripe; beneath ferruginous, the abdomen, and sometimes the propleuræ also, in great part piceous; the antennæ and legs testaceous. Head sparsely, finely punctate; antennæ slender, nearly half the length of the body in the male. Prothorax much broader than long, a little wider at the base than at the apex, rounded at the sides; the hind angles moderately produced and rather obtuse; the surface very finely, sparsely, uniformly punctate; the base sinuate and bi-incised on either side. Elytra suboval, two and one-half times the length of the prothorax, and of the same width at the base; finely, but rather deeply punctate-striate, the interstices feebly convex, flat on the disc, and sparsely, minutely punctate. Beneath very finely, thickly, uniformly punctate. Claws rectangularly dilated before the middle to the base.

Length $4\frac{3}{4}$–6, breadth $1\frac{3}{4}$–2 millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*).

Three examples. In coloration this species resembles *H. crucifer*, Cand., from Brazil, except that the common discoidal patch on the elytra does not extend broadly along the suture to the base; it may be known from that insect, however, by the absence of the long basal sulci on the thorax, and by the thorax and elytra being more rounded at the sides. It is more elongate than *H. fasciatus* and *H. unitinctus*.

### 19. **Horistonotus apterus.** (Tab. XIX. fig. 19, ♂.)

Short, moderately broad, convex, shining, somewhat sparsely clothed with fine yellowish-cinereous pubescence; brown or reddish-brown, the base of the elytra indeterminately paler, the front of the head and of the prothorax sometimes reddish, the legs and antennæ testaceous. Head thickly, somewhat coarsely punctate; antennæ slender, more than half the length of the body in the male, slightly shorter in the female. Prothorax broader than long, a little wider at the base than at the apex, widest at the middle, rounded at the sides, the latter somewhat obliquely converging in front and behind; the hind angles moderately long; the surface thickly, very finely, uniformly punctate; the base sinuate and bi-incised on either side. Elytra oval, twice the length of the prothorax, and of about the same width at the base; rather deeply punctate-striate, the punctures not very closely placed, the interstices moderately and equally convex throughout, very sparsely, minutely punctate. Beneath closely, finely, uniformly punctate. Claws rectangularly dilated from the middle to the base. Body apterous.

Length $4\frac{3}{4}$–$5\frac{1}{3}$, breadth $1\frac{2}{3}$–2 millim. (♂ ♀.)

*Hab.* Guatemala, San Gerónimo (*Champion*).

Four specimens. This insect resembles *H. cleryi* (Guér.), from Peru, in size and shape, which also is apterous *, but differs from it in the very fine, uniform punctuation of the thorax. The punctures on the head are coarser than those on the thorax. The elytra are not connate. *H. apterus* only differs from the genus *Coptostethus* in having the thoracic carina lateral, instead of inferior. Apterous North-American species of *Horistonotus* are noticed by Dr. Horn.

* *H. parmenoides*, Cand., is another apterous species.

### 20. **Horistonotus zunilensis.**

Moderately elongate, slender, shining, sparsely pubescent; reddish-brown, the elytra indeterminately testaceous towards the base, the antennæ and legs testaceous. Head somewhat finely punctured, with a few minute punctures intermixed; antennæ slender, half the length of the body. Prothorax considerably broader than long, feebly convex, wider at the base than at the apex, the sides moderately rounded and converging from the middle forwards and slightly sinuate behind; the hind angles moderately produced; the surface very sparsely, minutely punctate, with some slightly coarser punctures intermixed; the base sinuate and bi-incised on either side. Elytra about three times the length of the prothorax, and wider than it at the base, a little dilated at the sides at about one-fourth from the base and narrowing thence to the apex, the sides slightly rounded, the humeri rounded externally; rather finely punctate-striate, the interstices feebly convex, flatter towards the suture, and sparsely punctured. Beneath minutely punctured, with distinct intermixed coarser punctures. Claws simple.

Length 5, breadth $1\frac{2}{3}$ millim. (♂.)

*Hab.* GUATEMALA, Cerro Zunil (*Champion*).

One male example. This insect approaches *H. bicinctus*, but it is narrower, thus appearing more elongate; the thorax is almost parallel at the sides behind, the punctuation very sparse, fine, and unequal; and the claws are simple. It is the only Central-American species of the genus known as yet with simple claws. The puncturing of the thorax is unusually sparse.

## ESTHESOPUS.

*Esthesopus*, Eschscholtz, in Thon's Archiv, ii. 1, p. 32 (1829); Candèze, Monogr. Elat. iii. p. 274.

The thirty-three described species of this genus are all American, ranging from the Southern United States to La Plata. Thirteen are now recorded from within our limits, six of which are described as new. *Esthesopus* agrees with *Horistonotus* in having the carina separating the pronotum from the propleuræ strictly lateral (instead of being placed beneath, as in *Cardiophorus* and *Aptopus*); but differs from it in the more or less lamellate fourth tarsal joint, this character becoming very feeble, however, in *E. scapularis*, *E. coarctatus*, and their South-American allies. In all the Central-American species the tarsal claws are rectangularly dilated from the middle to the base. The head, thorax, and under surface have usually a double system of punctuation, but in some few species, *E. bifasciatus*, &c., it is single. Good differential characters are to be found in the form of the scutellum and in the relative length of the marginal carina of the thorax.

*a*. Prothorax without notches or sulci at the base, the marginal carina extending almost to the anterior angles; scutellum raised anteriorly and more or less convex; body more or less flattened above; antennæ short; fourth tarsal joint lamellate.

*a'*. Prothorax with a double system of punctuation, the small punctures distinct.

*a''*. The larger punctures becoming much coarser towards the sides and base, those in the transverse basal depressions very coarse and con-

spicuous; upper surface varying in colour from castaneous to pitchy-black; legs and antennæ testaceous; prothorax and elytra flattened on the disc . . . . . *humilis.*

*b*″. The larger punctures almost equal in size; no coarse punctures in the transverse basal depressions.

*a*‴. Upper surface concolorous—castaneous, brown, or black; the elytra without definite markings.

*a*⁴. Legs and antennæ testaceous; prothorax and elytra distinctly flattened on the disc.

*a*⁵. Elytra of the same width as the prothorax, subparallel in front . . . . . *hepaticus.*

*b*⁵. Elytra a little wider than the prothorax, somewhat rounded at the sides . . . . . *troglodytes.*

*b*⁴. Femora and tibiæ piceous, the tarsi and antennæ testaceous; prothorax and elytra distinctly flattened on the disc . . . . *ebeninus.*

*c*⁴. Antennæ, the basal joints excepted, infuscate; elytra slightly flattened on the disc . . . . . *fuscicornis.*

*b*‴. Upper surface not concolorous; legs and antennæ testaceous.

*d*⁴. Black, the elytra with a large rufo-testaceous apical patch, the prothorax and elytra flattened on the disc . . . . . *apicatus.*

*e*⁴. Black, the elytra with a basal and an apical patch testaceous; prothorax and elytra flattened on the disc . . . . . *quadripustulatus.*

*f*⁴. Elytra black (or with the sides and base piceous), the head and prothorax rufous; elytra flattened on the disc . . . . . *atripennis.*

*b*′. Prothorax almost uniformly punctate, the intermixed smaller punctures indistinct or obsolete.

*c*″. Prothorax and elytra flattened on the disc, the elytra subparallel towards the base; upper surface black . . . . . *nitidulus.*

*d*″. Prothorax flattened on the disc, the elytra somewhat convex and a little rounded at the sides; upper surface reddish brown . . . . *breviusculus.*

*b*. Prothorax bi-incised on either side at the base near the inner limit of the hind angles, the marginal carina abbreviated in front; elytra more or less rounded at the sides; scutellum concave; antennæ elongate; fourth tarsal joint feebly lamellate.

*c*′. Prothorax and elytra flattened on the disc, equal in width at the base; prothoracic punctuation uniform; upper surface rufo-testaceous, the prothorax and elytra nigro-fasciate . . . . . *bifasciatus.*

*d*′. Prothorax and elytra moderately convex, the elytra wider than the prothorax at the base; upper surface brownish.

*e*″. Prothoracic punctuation mixed; elytra unicolorous . . . . . *coarctatus.*

*f*″. Prothoracic punctuation uniform; elytra usually with a pale humeral spot or patch . . . . . *scapularis.*

### 1. **Esthesopus humilis.** (Tab. XIX. figg. 20; 20 *a*, prothorax.)

*Esthesopus humilis*, Cand. Monogr. Elat. iii. p. 284[1].
*Esthesopus murinus*, Cand. loc. cit. p. 284[2].

*Hab.* North America[1].—Mexico[2] (*Sallé, coll. Janson*), Minas Viejas (*Dr. Palmer*), Playa Vicente (*Höge*), Teapa in Tabasco (*coll. Janson*), Yucatan (*Pilate, in coll. Janson*), Temax in North Yucatan (*Gaumer*); Guatemala, Panzos (*Champion*); Honduras (*Sallé*); Nicaragua, Chontales (*Janson*); Panama, Bugaba (*Champion*).—Colombia; Brazil; Cuba.

This species may be readily distinguished from the allied forms with a distinct double system of punctuation on the thorax by the larger punctures being much coarser towards the sides and base than they are upon the middle of the disc, those in the basal depressions being coarse, deep, and conspicuous. The type of *E. humilis* is an abraded example, reddish-castaneous in colour, with the thorax abnormally formed; and that of *E. murinus* a dark specimen with the pubescence intact; both are contained in the Janson collection. The sculpture of the thorax is precisely similar in the two insects, though the coarse conspicuous punctures near the base are not mentioned by Dr. Candèze in his description of *E. murinus*. In colour and size it is as variable as many of the allied forms. Specimens of *E. humilis* were mixed with the series of *E. hepaticus* and *E. troglodytes* in the Janson collection.

One of the two examples from Yucatan is coloured like the type of *E. humilis*; others, from Teapa and elsewhere, are intermediate in this respect between *E. humilis* and *E. murinus*. A specimen from Yucatan is figured.

### 2. **Esthesopus hepaticus.** (Tab. XIX. fig. 21.)

*Cardiophorus hepaticus*, Erichs. in Germar's Zeitschr. für Ent. ii. p. 336[1].
*Esthesopus hepaticus*, Cand. Monogr. Elat. iii. p. 283[2].

*Hab.* Mexico, Tapachula in Chiapas (*Höge*); Guatemala, Zapote and San Gerónimo (*Champion*); Panama, Tolé (*Champion*).—South America[2] to Brazil[1].

Central-American specimens are smaller and narrower than those from Colombia and Brazil in the Janson collection, but they vary in this respect, as well as in colour. The thorax is parallel behind and arcuately narrowed in front; the punctuation is close, and consists of minute and moderately coarse punctures intermixed, the latter widely scattered but becoming more numerous towards the sides in front. The elytra are of the same width as the thorax, and subparallel in their basal half. The body is flattened above. The North-American insects formerly referred to *E. hepaticus* apparently belong to *E. parcus* and *E. dispersus*, Horn.

A specimen from San Gerónimo is figured.

### 3. Esthesopus troglodytes.

*Monocrepidius troglodytes*, Germ. Zeitschr. für Ent. i. p. 232 [1].
*Cardiophorus troglodytes*, Erichs. Zeitschr. für Ent. ii. p. 336 [2].
*Esthesopus troglodytes*, Cand. Monogr. Elat. iii. p. 282, t. 4. figg. 16, 16 *a*, *b* [3].

*Hab.* ? Mexico (*coll. Janson, ex Laferté and Candèze*).—Colombia [1 2 3]; Venezuela [3].

One of the two examples doing duty for *E. murinus*, Cand., in the Janson collection is certainly referable to *E. troglodytes*, and there is an old specimen in the same collection, from that of Laferté, labelled "Mexico (*Deyrolle*)," apparently belonging to it; but the locality "Mexico" requires confirmation. The thorax is sparsely and moderately finely punctate throughout, with minute intermixed punctures, and is without trace of coarse punctures near the base. The elytra are a little wider than the thorax, somewhat rounded at the sides, with the striæ shallow and the interstices almost flat towards the suture.

### 4. Esthesopus ebeninus.

Moderately elongate, robust, flattened above, shining, sparsely clothed with fine fusco-cinereous pubescence; above and beneath black, the antennæ, femora, and tibiæ piceous, the tarsi testaceous. Head thickly, coarsely punctate, with minute punctures intermixed; antennæ slender, short, scarcely reaching the hind angles of the prothorax. Prothorax moderately convex, broader than long, much wider at the base than at the apex, the sides almost straight and very slightly converging behind, and gradually and arcuately converging in front; the hind angles moderately produced; the surface closely punctured, the punctuation consisting of intermixed rather coarse and very fine punctures, the larger ones somewhat closely placed, becoming coarser and more crowded towards the sides and apex; the base sinuous on either side, without trace of sulci; the marginal carina complete. Scutellum large and feebly convex. Elytra two and one-half times the length of the prothorax, and not wider than it, subparallel from a little below the shoulders to beyond the middle, and arcuately narrowing thence to the apex, slightly narrowed in front, the humeri subangular; punctate-striate, the interstices feebly convex, flat on the disc, and thickly, very distinctly punctate. Beneath closely punctate, the punctuation consisting of fine and moderately coarse punctures intermixed, the larger ones on the propleuræ coarse. Fourth tarsal joint strongly lamellate. Claws rectangularly dilated from the middle to the base.
Length $6\frac{1}{2}$, breadth $2\frac{1}{8}$ millim.

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*).

One specimen. This species may be known from most of its allies by the infuscate femora and tibiæ, a character also to be found in *E. carbonarius*, Cand., from Cayenne. It is perhaps nearest to *E. hepaticus*, from which it differs in having the thorax less parallel, with the larger punctures coarser and closer, the elytra slightly narrowed at the base and more obtuse at the apex, the legs not entirely testaceous, &c.

### 5. Esthesopus fuscicornis.

Moderately elongate, rather robust, shining, somewhat sparsely clothed with fine cinereous or fusco-cinereous pubescence; black, the anterior angles of the prothorax testaceous, the head more or less rufescent in front, the elytra sometimes piceous or brownish, with the humeri indeterminately paler; the antennæ piceous or brown, with the basal one or two joints testaceous, the legs testaceous. Head thickly, rather coarsely punctate, with a few very fine punctures intermixed; antennæ slender, short, about reaching

the hind angles of the prothorax. Prothorax broader than long, much wider at the base than at the apex; the sides moderately rounded, gradually converging in front, and straight and slightly converging behind; the hind angles rather short; the entire surface somewhat sparsely, finely punctate, with minute scattered punctures intermixed; the base feebly sinuate on either side, without trace of sulci; the marginal carina entire. Scutellum somewhat convex in front. Elytra about two and two-thirds longer than the prothorax, and of the same width at the base, slightly flattened on the disc, feebly rounded at the sides, and arcuately narrowing from the middle to the apex, the humeri rounded; deeply punctate-striate, the interstices convex, flatter towards the suture, and somewhat thickly punctured. Beneath thickly, rather coarsely punctate, with a few scattered minute punctures intermixed. Fourth tarsal joint strongly lamellate. Claws rectangularly dilated from the middle to the base.

Length 5–6, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo in Guerrero (*Höge*, *H. H. Smith*), Cuernavaca in Morelos (*Sallé*, *H. H. Smith*).

Found in plenty at Chilpancingo. This insect closely resembles *E. nitidulus*, but differs from it in the distinctly mixed punctuation of the thorax, the larger punctures being much finer and the smaller ones more numerous; the body is less flattened above and less parallel; and the antennæ are infuscate, except at the base. Some of the specimens are more parallel than others, irrespective of sex. Single examples from Capulalpam (*Sallé*) and Yautepec (*Höge*) perhaps belong here, but they have the antennæ testaceous.

### 6. **Esthesopus apicatus.** (Tab. XIX. fig. 22.)

*Esthesopus apicatus*, Cand. Elat. Nouv. iii. p. 85 (1881) [1].

*Hab.* Mexico [1].

The type of *E. apicatus* has been kindly communicated by Dr. Candèze. It differs from the specimens here referred to *E. nitidulus* in having the larger punctures on the thorax a little more scattered and the smaller ones more distinct, and the elytra with a large rufo-testaceous apical patch.

### 7. **Esthesopus quadripustulatus.** (Tab. XIX. fig. 23.)

*Esthesopus quadripustulatus*, Cand. Monogr. Elat. iii. p. 285 [1].

*Hab.* Nicaragua, Chontales (*Janson*).—Colombia; Venezuela [1].

One specimen, agreeing with the type in the Janson collection.

### 8. **Esthesopus atripennis.** (Tab. XIX. fig. 24.)

*Esthesopus atripennis*, Cand. Monogr. Elat. iii. p. 280, t. 4. fig. 17 [1].
*Esthesopus bicolor*, Horn, Trans. Am. Ent. Soc. xii. p. 44 [2].

*Hab.* North America, Florida [2].—Mexico [1] (*coll. Janson*, *Sallé*), Ventanas in Durango, Cuernavaca in Morelos, Iguala in Guerrero (*Höge*), Chilpancingo in Guerrero (*Höge*, *H. H. Smith*), Amula in Guerrero (*H. H. Smith*).

*Var.* The elytra rufous, with the sides, base, and apex broadly and indeterminately piceous.

*Hab.* Mexico, Chilpancingo (*Höge*).

Of the eleven specimens examined, ten belong to the typical form and one to the variety. A specimen from Amula is figured.

### 9. **Esthesopus nitidulus.**

*Esthesopus nitidulus,* Cand. Monogr. Elat. iii. p. 279[1].

*Hab.* Mexico[1], Jalapa, Juquila (*Höge*), Temax in North Yucatan (*Gaumer*); British Honduras, R. Sarstoon (*Blancaneaux*); Panama, Bugaba (*Champion*).

A single specimen from each locality. In this species the thorax is very little narrowed in front, and the elytra are subparallel in their basal half. The thorax is sparsely and somewhat coarsely punctured throughout, with a few excessively minute punctures intermixed (the latter being only visible under a high magnifying-power), and without trace of basal sulci. The pubescence is very sparse and fusco-cinereous in colour. The extreme apex of the elytra is sometimes reddish, and the abdomen in some specimens is partly or entirely rufous. The single example from British Honduras is larger and much more elongate than the others. The type of *E. nitidulus* has not been seen by me. Our specimens vary from $4\frac{1}{2}$–8 millim. in length.

### 10. **Esthesopus breviusculus.** (Tab. XIX. fig. 25.)

Rather short and broad, robust, shining, sparsely pubescent; reddish-brown, the legs and antennæ testaceous. Head thickly, rather coarsely punctate; antennæ slender, short, not extending beyond the hind angles of the prothorax. Prothorax feebly convex, flattened on the disc towards the base, broader than long, the sides parallel behind and gradually arcuately converging in front; the hind angles not or feebly divergent, obtuse, excavate above for the reception of the humeri; the surface somewhat sparsely and moderately finely punctate throughout, without smaller punctures intermixed; the base sinuate on either side and without sulci; the marginal carina entire. Scutellum convex in front. Elytra moderately convex, two and one-half times the length of the prothorax, and slightly wider than it at the base, gradually widening to about the middle and arcuately narrowing thence to the apex, the humeri subangular in front; deeply punctate-striate, the interstices convex, flatter towards the suture, and somewhat thickly punctured. Beneath thickly, rather coarsely punctate, without intermixed finer punctures. Fourth tarsal joint strongly lamellate. Claws rectangularly dilated from the middle to the base.

Length $5\frac{3}{4}$–$6\frac{1}{4}$, breadth $2\frac{1}{8}$–$2\frac{1}{2}$ millim.

*Hab.* Mexico, Acapulco (*Höge*).

Two specimens, probably sexes, one being much broader than the other. This species has the thorax flattened on the disc behind and the elytra rather convex. The punctuation above and beneath is uniform, without smaller punctures intermixed. *E. breviusculus* is perhaps nearest allied to *E. nitidulus*, from which it differs in its more convex and less parallel elytra, the elytra themselves being slightly wider than the thorax. The punctuation of the thorax is similar.

### 11. **Esthesopus bifasciatus.** (Tab. XIX. fig. 26.)

Short, moderately convex, somewhat flattened above, shining, sparsely clothed with fine yellowish-cinereous pubescence; rufous or rufo-testaceous, the prothorax piceous, with the anterior margin and the base, rather broadly, of the ground-colour; the elytra with two transverse black fasciæ—one broad, median, obliquely widening inwards in front and extending along the suture to near the scutellum, and the other, narrower, immediately before the apex, the two connected along the suture; beneath piceous, reddish at the sides; the antennæ and legs testaceous. Head sparsely, somewhat coarsely punctate; antennæ slender, nearly half the length of the body. Prothorax much broader than long, considerably wider at the base than at the apex, moderately rounded at the sides; the hind angles short and rather obtuse; the surface sparsely, very finely punctate; the base bi-incised on either side; the marginal carina abbreviated in front. Elytra about two and one-half times the length of the prothorax, and of the same width at the base, narrowing from the middle, a little rounded at the sides; rather deeply punctate-striate, the punctures not very closely placed, the interstices feebly convex throughout, and sparsely, minutely punctate. Beneath finely and sparsely, the abdomen closely, uniformly punctate. Fourth tarsal joint feebly lamellate. Claws rectangularly dilated from the middle to the base.

Length 4, breadth $1\frac{2}{5}$ millim.

*Hab.* PANAMA, Bugaba (*Champion*).

Two specimens.

### 12. **Esthesopus coarctatus.** (Tab. XIX. fig. 27, ♀.)

*Esthesopus coarctatus*, Cand. in litt.

Moderately elongate, shining, finely and rather sparsely pubescent; reddish-brown or brownish-testaceous, the front of the head and the anterior margin of the prothorax paler; the antennæ testaceous, the legs flavo-testaceous. Head thickly, moderately finely punctate; antennæ slender, in the female extending to considerably beyond the humeri (the outer joints broken off in the male). Prothorax a good deal broader than long, wider at the base than at the apex, the sides rounded anteriorly and feebly sinuate behind; the hind angles moderately produced; the surface rather sparsely, finely punctate, towards the sides and apex with slightly coarser punctures intermixed; the base sinuate and bi-incised on either side; the marginal carina abbreviated in front. Elytra three times the length of the prothorax, and wider than it at the base, moderately rounded at the sides, and narrowing from about the middle to the apex, the humeri rounded; punctate-striate, the interstices feebly convex, flatter on the disc, and distinctly punctured. Beneath closely and finely, the pro- and metasternum sparsely, punctured, the propleuræ and metasternum with slightly coarser punctures intermixed. Fourth tarsal joint feebly dilated and excavate. Claws rectangularly dilated from the middle to the base.

Length 6–$6\frac{1}{4}$, breadth 2–$2\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* MEXICO, Orizaba (*coll. Janson*).

Three specimens in the Janson collection, labelled as above in Dr. Candèze's handwriting. Larger and broader than *E. scapularis*, the thorax less narrowed behind, with the punctuation more distinct and unequal, the elytral striæ shallower towards the suture, the interstices more distinctly punctured.

### 13. **Esthesopus scapularis.** (Tab. XIX. fig. 28, ♂.)

Moderately elongate, shining, finely and rather sparsely pubescent; brown or brownish-testaceous, the front of the head, the anterior margin and hind angles of the prothorax, and a humeral patch on the elytra—in one specimen extending to near the middle and in others small,—testaceous; the antennæ fusco-testaceous with the two basal joints testaceous, or entirely testaceous; the legs flavo-testaceous. Head

closely, finely punctate; antennæ slender, elongate, about two-thirds the length of the body in the male, a little shorter in the female. Prothorax broader than long, moderately convex, not or very little wider at the base than at the apex, the sides rounded from the middle forwards and sinuate behind; the hind angles moderately produced; the surface very finely and somewhat thickly punctate; the base sinuate and feebly bi-incised on either side; the marginal carina abbreviated in front. Elytra about three times the length of the prothorax, and considerably wider than it, moderately rounded at the sides, and narrowing from a little before the middle to the apex, the humeri rounded; deeply punctate-striate, the interstices feebly convex and minutely punctate. Beneath closely, finely punctate. Fourth tarsal joint feebly widened, and excavate above for the reception of the fifth joint. Claws rectangularly dilated from the middle to the base.

*Var.* The humeral patch on the elytra obliterated.

Length $4\frac{4}{5}$–$5\frac{3}{4}$, breadth $1\frac{1}{4}$–$1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, El Tumbador, Cerro Zunil, and Panajachel (*Champion*).

Nine examples, all from the Pacific slope, from elevations between 2500 and 5000 feet. This insect closely resembles some of the varieties of *Horistonotus bicinctus*, but may be known from them by the excavate and feebly widened fourth tarsal joint and the relatively narrower thorax. *E. scapularis* is allied to the South-American *E. delinitor* and *E. phisalus*, Cand., and *E. placidus*, Er., but differs from all these in its more oval elytra and narrower thorax. The dilatation of the fourth tarsal joint is so slight that the insect would be almost equally well placed in *Horistonotus*. A male from Cerro Zunil is figured.

## Group **MELANOTINI.**

### DODECACTENUS.

*Dodecactenus*, Candèze, Ann. Soc. Ent. Belg. xxxiii. p. 102 (1889) (Elat. Nouv. iv. p. 36); Cat. Méthod. Elat. p. 103 (1891).

This genus is referred by Dr. Candèze to the group Elaterini. Its affinities, however, are obviously with *Spheniscosomus*, from which it chiefly differs in having the mesosternum connate with the metasternum; this last-mentioned character is mainly peculiar to the group Chalcolepidiini. *Dodecactenus* contains two species, both peculiar to Central America; they are found in forest-clearings and at a considerable elevation.

#### 1. **Dodecactenus staudingeri.** (Tab. XX. fig. 1, ♂.)

*Dodecactenus staudingeri*, Cand. Ann. Soc. Ent. Belg. xxxiii. p. 103 (Elat. Nouv. iv. p. 37) [1].

*Hab.* Costa Rica, Volcan de Irazu, Rio Sucio (*Rogers*); Panama, Volcan de Chiriqui 4000 feet (*Champion*), Chiriqui [1] (*Trötsch*).

I have seen nine specimens of this species, four of which are from Chiriqui. The antennæ are short, extending only as far as the hind angles of the thorax in the female, slightly longer in the male; the third joint is about twice as long as the second, and nearly as long as the fourth. The apex of the fifth ventral segment is broadly rounded

and closely punctured in the male, subtruncate and sparsely punctured in the female. The frontal carina is slightly deflexed in the middle and feebly rounded. The pubescence is coarse, whitish, cinereous, or fulvo-cinereous in colour, and on the elytra seriately arranged. The under surface, the prosternum included, is very sparsely, finely punctate. The basal sulci of the thorax are short and deep. The elytra are narrowed from the base in the male, subparallel to the middle in the female; the punctures are very fine and scattered, irregularly arranged, except along the fine sutural stria.

## 2. **Dodecactenus guatemalensis.** (Tab. XX. fig. 2, ♂.)

♂. Very elongate, flattened above, shining, black, very sparsely clothed with rather coarse, decumbent, long, cinereous hairs, these forming a definite line along either side of the suture of the elytra; the antennæ and legs piceous or pitchy-brown, cinereo-pubescent, the antennæ also ciliate along their inner edge. Head sparsely, coarsely punctate, declivous in front, the carina extending obliquely downwards so as to form a triangular frontal plate; antennæ nearly two-fifths the length of the body, the third joint a little longer than the second, the two together scarcely so long as the fourth. Prothorax flattened behind, as long as broad, conical, rapidly narrowing from the base forwards, deeply canaliculate before the base; the hind angles long, divergent, incurved at the tip, bicarinate, the inner carina the longest; the basal sulci broad and deep, rather long, and limited outwards by a distinct longitudinal plica; the surface with widely scattered rather fine punctures, these becoming coarser and more crowded towards the apex, a broad space down the middle from a little before the apex to the base impunctate. Elytra more than three times the length of the prothorax, narrowing from the base, flattened on the disc; seriate-punctate, the striæ obliterated, except at the base, where they are deeply impressed, and along the suture, the punctures widely separated, coarse at the sides, becoming much finer towards the suture and apex; the interstices flat, each with a single very irregular row of minute punctures. Beneath rather sparsely punctate, the prosternum very coarsely and closely punctured at the sides, smooth along the middle; the fifth ventral segment closely and coarsely punctured towards the apex, and longitudinally swollen in the middle behind.

♀. Antennæ not extending beyond the hind angles of the prothorax. Prothorax somewhat rounded at the sides, less flattened on the disc behind, with the deep median groove extending more forwards. Elytra subparallel to the middle. Fifth ventral segment more sparsely punctate towards the apex.

Length 15–16, breadth 4–4¼ millim.

*Hab.* GUATEMALA (*Sallé*), Purula and Coban in Vera Paz (*Champion*), between Tactic and La Tinta in Vera Paz (*Conradt*).

Males of this insect were found in plenty at Purula. Of the females, single specimens only have been received from Coban and Tactic, and there is a third in the Sallé collection. The sexes are very dissimilar. The present species differs in many respects from *D. staudingeri*, more especially in the subtriangular frontal plate, the short third joint of the antennæ, the sparser pubescence, the longer and broader basal sulci of the thorax, the hind angles of which are bicarinate and the disc deeply canaliculate behind, the less sparsely punctured under surface, the coarsely and closely punctured sides of the prosternum, &c.

## SPHENISCOSOMUS.

*Spheniscosomus*, Schwarz, Wien. ent. Zeit. xi. p. 132 (1892); Buysson, Faune Gallo-Rhénane, Elat. p. 129 (1894).
*Melanotopsis*, Lewis, Ann. & Mag. Nat. Hist. (6) xiii. pp. 191, 192, figg. 1, 2 (1894).
*Melanotus*, Candèze, Monogr. Elat. iii. p. 298 (part.).

*Spheniscosomus* includes those members of the old genus *Melanotus* which have the prosternal process horizontally produced and the sides of the mesosternal cavity raised and **V**-shaped. Seven species have been referred to it, including two from Southern Europe, two from Japan, one from China, and two from Java*; and six Tropical-American forms must also be included. The genus has a more southern distribution in the New World than *Melanotus*, extending as far south as Panama. The species, like those of *Melanotus*, are very closely allied and not easy to separate. Some of them have an additional carina or plica within the hind angles of the thorax; this carina, however, is not always distinct in the same species (it being often obsolete in the females), and it cannot be relied upon as a specific character. The males, as in *Melanotus*, usually have the antennæ closely ciliate along their inner edge, and sometimes the fifth ventral segment is peculiarly sculptured in this sex, as, for example, in *S. tropicalis*. *S. lævis* is easily recognizable by the very deep, long basal sulci of the thorax. The six Central-American species may be tabulated thus:—

*a*. Antennæ with the third joint short, not much longer than the second.
  *a'*. The hind angles of the prothorax with a long, sharp, oblique carina; the basal sulci long and shallow; the prothoracic punctuation coarse and close . . . *rubicundus*.
  *b'*. The hind angles of the prothorax with a sharp, straight carina; the basal sulci short, the prothoracic punctuation excessively coarse and moderately close . *lanuginosus*.
*b*. Antennæ with the third joint much longer than the second.
  *c'*. Hind angles of the prothorax with a long, sharp carina.
    *a''*. The basal sulci long; the prothoracic punctuation very sparse and rather fine; body elongate . . . . . *tropicalis*.
    *b''*. The basal sulci short; the prothoracic punctuation closer and very coarse; body rather short . . . . . *cribrosus*.
  *d'*. Hind angles of the prothorax obsoletely carinate; body elongate.
    *c''*. The basal sulci moderately long, shallow in front; the prothoracic punctuation coarse, sparse . . . . . *rodriguezi*.
    *d''*. The basal sulci long and very deep; the prothoracic punctuation fine, very sparse . . . . . *lævis*.

### 1. **Spheniscosomus rubicundus.** (Tab. XX. figg. 4, ♂; 4 *a*, prothorax.)

*Melanotus rubicundus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 112 (Elat. Nouv. iv. p. 46) [1].

*Hab.* GUATEMALA [1], Capetillo (*Champion*).

One female and two males of this species were captured by myself in Guatemala.

* *Melanotus ebeninus*, Cand., from Luzon, and *M. cuneolus*, Cand., from Java, also belong to *Spheniscosomus*.

The insect is of a castaneous or obscure rufous colour. The antennæ are ciliate on their inner edge and half the length of the body in the male, much shorter in the female; the second and third joints are small. The thorax is very coarsely, thickly punctate, with the hind angles sharply and obliquely unicarinate, and the basal sulci long and rather shallow. The elytra are narrowed from the base in the male, more parallel in the female; seriate-punctate, the punctures placed in almost obsolete striæ; the interstices are almost flat, each with an irregular double row of widely scattered fine punctures.

## 2. Spheniscosomus lanuginosus.

♂. Very elongate, flattened above, shining, rufo-castaneous, somewhat thickly clothed with long, decumbent, rather coarse, cinereous hairs. Head very coarsely, closely umbilicate-punctate; antennæ extending to a little beyond the hind angles of the prothorax, joint 3 short, slightly longer than 2. Prothorax broader than long, rapidly narrowing from the base, the sides very feebly sinuate behind; the hind angles divergent, slightly incurved at the tip, sharply unicarinate; the basal sulci short; the surface exceedingly coarsely, deeply, closely punctate, the punctuation becoming more crowded near the anterior angles and very coarse on the basal declivity, the disc with a smooth depressed space along the middle behind. Elytra three and two-thirds longer than the prothorax, gradually narrowing from the base, flattened on the disc; finely seriate-punctate, the punctures somewhat widely separated, the striæ obsolete, except on the basal declivity and along the suture; the interstices almost flat, each with two rows of fine punctures. Beneath rather sparsely punctate, the punctures fine on the abdomen, coarser on the metasternum, and very coarse and umbilicate on the prosternum and propleuræ.

Length 15, breadth nearly 4 millim.

*Hab.* Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One specimen. This species resembles *Melanotus prolixus*, but differs from it in having the sides of the mesosternal cavity raised; the punctuation of the thorax is extremely coarse, even on the basal declivity (instead of finer on this part, as in *M. prolixus*). The antennæ are rather short, and not ciliate on their inner edge.

## 3. Spheniscosomus tropicalis. (Tab. XX. figg. 7, ♂; 7 *a*, fifth ventral segment.)

Elongate, flattened above, shining; castaneous or rufo-castaneous, the elytra with the apex narrowly, and sometimes the suture and lateral margins towards the tip, infuscate or black, the head, or the head and prothorax (except in the middle behind), also sometimes infuscate or black; beneath usually darker than above, the propleuræ, sides, and last two ventral segments of the abdomen sometimes black; above and beneath very sparsely clothed with rather coarse, decumbent, long, cinereous or yellowish-cinereous hairs. Head very sparsely, coarsely punctate, the frontal carina rounded; antennæ about two-fifths of the length of the body in the male, much shorter in the female, ciliate on the inner edge in the male, the third joint intermediate in length between the second and fourth. Prothorax broader than long, narrowing from the base and with the sides somewhat abruptly converging in front in the male, more parallel behind in the female; the hind angles moderately long, divergent, slightly incurved at the tip, bicarinate, the outer carina sharply defined, the inner one feeble and sometimes obsolete, especially in the females; the basal sulci moderately long, deep; the surface with very widely scattered fine or moderately coarse punctures, which become coarser and more crowded towards the anterior angles, deeply canaliculate behind, and with a space along the middle of the basal half impunctate. Elytra more than three times the length of the prothorax, narrowing from the base in both sexes; seriate-punctate, the punctures

placed in almost obsolete striæ, the striæ deeply impressed on the basal declivity, the punctures fine, becoming still finer at the apex and coarser at the sides; the interstices almost flat, each with two very irregular rows of fine punctures. Beneath sparsely punctured, the propleuræ and the sides of the prosternum more closely and very coarsely punctate; fifth ventral segment in the male with a smooth oblong depression on either side of the middle, limited inwards by a dense fringe of hairs.

*Var.* The head, the disc of the prothorax in front, and the suture rather broadly from the base to the apex, pitchy-black.

Length $10\frac{3}{4}$–$13\frac{1}{3}$, breadth 3–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, El Tumbador, Las Mercedes, Cerro Zunil, Capetillo (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Found in plenty at Cerro Zunil and Bugaba; the variety is represented by a single specimen from Cerro Zunil. The colour is rather variable, but the insect is always in great part castaneous or rufo-castaneous. In some of the females from Bugaba the third joint of the antennæ is as long as the fourth, and the inner costa or plica in the hind angles of the thorax is obliterated. The males differ from the females in the sculpture and clothing of the fifth ventral segment, as well as in the length of the antennæ, &c. The localities for this species are all on the Pacific slope.

### 4. **Spheniscosomus cribrosus.** (Tab. XX. fig. 6, ♂.)

Moderately elongate, rather broad, shining, castaneous or piceous, sparsely clothed with decumbent yellowish-cinereous hairs. Head very coarsely, closely umbilicate-punctate, the frontal carina rounded and prominent; antennæ short, about reaching the hind angles of the prothorax in the male, shorter in the female, ciliate on their inner edge in the male, the third joint almost as long as the fourth. Prothorax broader than long, subparallel behind, the sides arcuately converging from the middle forwards; the hind angles considerably produced, sharply, longitudinally unicarinate, the carina long; the basal sulci short; the surface coarsely, somewhat sparsely punctate—the punctuation becoming closer, coarser, and umbilicate towards the sides and apex, dense near the anterior angles, and fine on the basal declivity,—not or feebly canaliculate behind, and with a space down the centre from the middle to the base impunctate. Elytra two and three-fourths longer than the prothorax, and in front distinctly narrower than it, narrowing from the base; coarsely seriate-punctate, the punctures becoming much finer towards the apex, and placed in almost obsolete striæ, these becoming deeply impressed on the basal declivity, the interstices flat, each with two irregular rows of fine, widely separated, punctures. Beneath thickly and very coarsely umbilicate-punctate, the punctuation much finer along the middle of the metasternum and on the abdomen.

Length $10\frac{1}{2}$–$12\frac{1}{4}$, breadth $3\frac{1}{5}$–$3\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* MEXICO, Jalapa (*Höge, Godman*); NICARAGUA, Chontales (*Belt*).

Four specimens, three of which are from Mexico. This species is less elongate and has a relatively wider thorax than any of the other Central-American forms. In both sexes the thorax is subparallel behind, and the elytra are narrowed from the base. The hind angles of the thorax are sharply, longitudinally unicarinate. The punctuation is very coarse in the Mexican specimens, finer in the Nicaraguan example,

### 5. Spheniscosomus rodriguezi.

*Melanotus rodriguezi*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. clxvii (Elat. Nouv. ii. p. 40) [1].
*Melanotus lucidus*, Cand. in litt.

*Hab.* Guatemala [1] (*Sallé, coll. Janson*); Nicaragua, Chontales (*Belt*).

Of this species I have seen eight specimens, two only of which are from Nicaragua (both females), varying from 16 to 22½ millim. in length. The coarse punctures on the thorax are widely scattered on the disc, becoming more crowded towards the sides and apex; the hind angles are obsoletely carinate. The third joint of the antennæ is about twice as long as the second, and narrower and shorter than the fourth. The antennæ are short, extending very little beyond the hind angles of the thorax in the male, still shorter in the female. The thorax, as usual, is more rounded at the sides in the female than in the male. The specimens of this insect in the Janson collection are labelled in Dr. Candèze's handwriting, *Melanotus lucidus*, Cand.

### 6. Spheniscosomus lævis. (Tab. XX. fig. 5, prothorax, ♂.)

Elongate, flattened above, varying in colour from deep black to castaneous, shining, very sparsely clothed with rather coarse, decumbent, cinereous or yellowish-cinereous hairs, the legs and antennæ rufous or brown. Head sparsely, coarsely punctate; antennæ extending to a little beyond the hind angles of the prothorax, and ciliate on their inner edge, in the male, shorter in the female, the third joint nearly or quite as long as the fourth. Prothorax nearly as long as broad, a little rounded at the sides, gradually narrowing from the base; the hind angles feebly or obsoletely carinate; the basal sulci very deep, long, and oblique; the surface with widely scattered very fine or moderately coarse punctures, these becoming coarser and more crowded near the anterior angles, canaliculate behind. Elytra about three times the length of the prothorax, narrowing from the base; finely or moderately coarsely seriate-punctate, the striæ obsolete or shallow, except on the basal declivity, where they are very deeply impressed, and along the suture, the punctures somewhat distantly placed; the interstices flat or very feebly convex, each with two very irregular rows of widely separated fine or minute punctures. Beneath with widely separated fine punctures, these becoming coarser at the sides; the fifth ventral segment more closely punctured and pubescent at the apex in the male than in the female.

Length 12¼–19½, breadth 3⅜–5½ millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*); British Honduras (*coll. Janson*); Guatemala, Coban (*Conradt*); Nicaragua, Chontales (*Belt, E. M. Janson*); Panama, Volcan de Chiriqui (*Champion*).

Eight specimens, varying greatly in size and colour, and also in the intensity of the punctuation. Some of the males are very elongate, deep black, and very finely punctured, with the elytral striæ obsolete, except on the basal declivity and along the suture. The single examples from Mexico and British Honduras are more coarsely punctured than the others. Two of the females from Chontales are less elongate than usual. This species may chiefly be known by the long and deep basal sulci of the thorax and the very widely scattered fine punctuation of its surface, the punctures being a little more crowded near the anterior angles only, and the finely seriate-

punctate elytra. In one of the males from Chontales, deep black in colour, the basal sulci of the thorax are limited externally by a prominent longitudinal plica, and the space between this and the almost obsolete carina extending obliquely forwards from the tip of the hind angles is deeply triangularly excavate.

## MELANOTUS.

*Melanotus,* Eschscholtz, in Thon's Archiv, ii. 1, p. 32 (1829); Candèze, Monogr. Elat. iii. p. 298 (part.).
*Perimecus,* Stephens, Illustr. Brit. Ent., Mand. iii. p. 263 (1830).
*Cratonychus,* Boisduval et Lacordaire, Faune Ent. env. Paris, i. p. 631 (1835); Leconte, Trans. Am. Phil. Soc. new ser. x. p. 473.
*Priopus,* Castelnau, Hist. Nat. Ins. Col. i. p. 251 (1840).

Of the 165 described species of this widely-distributed genus, forty-six are American, and of these latter all but three are nearctic. As already noted under *Spheniscosomus*, a certain number of them have been separated. In America *Melanotus* does not appear to extend south of the Mexican State of Vera Cruz. One species, *M. castanipes* (Payk.), is holarctic, extending into Northern Mexico.

*a.* Antennæ with the third joint short, not much longer than the second; the basal sulci of the prothorax short.
  *a'.* Prothorax longitudinally carinate down the middle behind; the hind angles with a very long carina, extending forwards to the middle of the prothorax. *carinifer.*
  *b'.* Prothorax not carinate in the middle behind; the hind angles with a short carina.
    *a''.* Elytra more than three times the length of the prothorax, the interstices simply punctured.
      *a'''.* Prothoracic punctuation very coarse; elytra narrowing from before the middle . . . . . *prolixus.*
      *b'''.* Prothoracic punctuation moderately coarse; elytra subparallel to beyond the middle . . . . . *castanipes.*
    *b''.* Elytra not more than three times the length of the prothorax, the interstices transversely rugulose and punctured; the prothoracic punctuation rather fine . . . . . *rugulipennis.*
*b.* Antennæ with the third joint nearly twice as long as the second; the hind angles of the prothorax with a short carina, the basal sulci short . . . . . *mexicanus.*

### 1. **Melanotus carinifer.** (Tab. XX. fig. 3, prothorax, ♂.)

♂. Moderately elongate, flattened above, shining, sparsely pubescent, above pitchy-brown, beneath rufo-castaneous, the legs and antennæ ferruginous. Head coarsely, closely umbilicate-punctate; antennæ two-fifths the length of the body, the third joint a little longer than the second. Prothorax slightly broader than long, gradually narrowing from the base, the sides feebly rounded, slightly sinuate behind; the hind angles long and divergent, with a sharp supra-marginal carina extending forwards to the middle of the prothorax, and a short, sinuous carina or plica within; the basal sulci very short and inconspicuous; the surface coarsely and rather closely punctured, the punctuation becoming closer, coarser, and umbilicate towards the anterior angles, the disc sharply longitudinally carinate in the middle behind

and with a space along the centre impunctate. Elytra rather more than three times the length of the prothorax, subparallel to the middle; punctate-striate, the interstices almost flat, each with two irregular series of fine punctures. Beneath thickly, coarsely punctate, the fifth ventral segment very coarsely punctured towards the apex; mesosternum depressed.

Length 9, breadth $2\frac{1}{2}$ millim.

*Hab.* MEXICO, Durango city (*Höge*).

One male example. This species differs from all the allied American forms in the longitudinally carinate disc of the thorax. The very coarsely punctured apex of the fifth ventral segment is probably a sexual character. *M. carinicollis*, Schwarz, from Turkestan, also has the thorax longitudinally carinate, but in that insect the carina is stated to extend nearly to the anterior margin.

### 2. **Melanotus prolixus.**

*Cratonychus prolixus*, Erichs. in Germar's Zeitschr. für Ent. iii. p. 94 (1841) [1].
*Melanotus prolixus*, Cand. Monogr. Elat. iii. p. 339 [2].

*Hab.* MEXICO [1 2], Oaxaca, Juquila, Yolos (*Sallé*).

I have seen five specimens of this species, including both sexes. The insect chiefly differs from the allied Central-American forms in the very coarse, moderately close punctuation of the thorax, the latter with the hind angles rather sharply carinate. The antennæ are ciliate on their inner edge and moderately elongate in the male, shorter in the female; the second and third joints are very short and equal in length. The hind angles of the thorax have a short carina, and on the inner side of it there is a second carina or plica, which is well defined in some of the males and obsolete in the females. The mesosternum is less depressed than in *M. castanipes* and its allies.

### 3. **Melanotus castanipes.**

*Elater castanipes*, Payk. Faun. Suec. iii. p. 23 (1800) [1].
*Melanotus castanipes*, Kies. Naturg. Ins. Deutschl. iv. p. 251 [2]; Cand. Monogr. Elat. iii. p. 311 [3].
*Cratonychus castanipes*, Erichs. in Germar's Zeitschr. für Ent. iii. p. 95 [4].
*Perimecus fulvipes*, Kirby, Fauna Bor.-Am. iv. p. 148 [5].
*Cratonychus inæqualis*, Lec. Trans. Am. Phil. Soc. new ser. x. p. 476 [6] *.

*Hab.* NORTH AMERICA, Canada [3 5], Lake Superior [6].—MEXICO, Ciudad in Durango (*Höge*).—EUROPE [1 2 3 4]; SIBERIA [3]; ASIA MINOR [3].

We have received one male and four females of this widely distributed species from Northern Mexico. They agree perfectly with others from Europe. The females are of very large size (18–$18\frac{1}{2}$ millim. in length); the male is unusually small, measuring 12 millim. only. The insect differs from nearly all its allies in having the elytra very elongate (from three and one-half to three and two-thirds longer than the thorax, measured along the median line), and subparallel to beyond the middle, in both sexes.

* For the rest of the synonymy, see Candèze (*loc. cit.*).

### 4. **Melanotus rugulipennis.**

♂. Elongate, shining, pitchy-black, the antennæ and legs ferruginous; above and beneath rather sparsely clothed with decumbent yellowish-cinereous hairs. Head closely, coarsely umbilicate-punctate, the frontal carina prominent; antennæ short, extending slightly beyond the hind angles of the prothorax, ciliate on their inner edge, the third joint a little longer than the second. Prothorax broader than long, subparallel behind, gradually and arcuately narrowing from the basal third to the apex; the hind angles moderately long, not divergent, unicarinate, the carina short; the basal sulci short; the surface somewhat thickly, finely punctate, the punctuation becoming coarser and more crowded towards the sides and apex, the interspaces with a few widely scattered very minute punctures, obsoletely canaliculate behind. Elytra three times the length of the prothorax, gradually narrowing from about the basal third, flattened on the disc; rather deeply punctate-striate, the interstices feebly convex and transversely rugulose, each with two irregular rows of fine punctures. Beneath somewhat thickly punctured, the pro- and metasternum smoother in the middle, the punctures oblong in shape on the propleuræ and on the lateral portions of the body, the apex of the fifth ventral segment more densely punctate; mesosternum depressed.

Length 10, breadth $2\frac{3}{4}$ millim.

*Hab.* Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

One male example. This insect resembles the European *M. rufipes*, but differs from it in its much smaller size, shorter antennæ, the third joint of which is very little longer than the second, less coarsely punctured thorax, &c. It is allied to the North-American *M. communis* (Gyll.) and *M. exuberans*, Lec., but has a more finely punctured thorax, &c.

### 5. **Melanotus mexicanus.**

Moderately elongate, shining, piceous or fusco-castaneous, the humeri or the base of the elytra indeterminately paler, the antennæ and legs ferruginous; above and beneath rather sparsely clothed with decumbent yellowish-cinereous hairs. Head closely, coarsely umbilicate-punctate, the punctures shallow; antennæ moderately elongate and rather slender in the male, shorter and stouter in the female, the third joint nearly twice as long as the second. Prothorax a little broader than long, with the sides rounded and converging from the middle forwards, somewhat oblique towards the apex in the male, and feebly sinuate behind; the hind angles moderately long, not or very slightly divergent, sharply, longitudinally unicarinate, the carina short; the basal sulci short; the surface finely or moderately coarsely, somewhat thickly punctate, the punctuation becoming closer, coarser, and umbilicate towards the sides and near the apex, feebly canaliculate behind. Elytra three times the length of the prothorax, gradually narrowing from about the basal third, flattened on the disc; finely or moderately coarsely punctate-striate, the interstices flat or feebly convex, each with two irregular rows of fine scattered punctures. Beneath thickly, rather coarsely punctate, the punctures oblong in shape on the propleuræ and on the lateral portions of the body, the fifth ventral segment coarsely punctured and with the punctures longitudinally confluent; mesosternum depressed.

Length $9\frac{1}{2}$–$11\frac{1}{2}$, breadth $2\frac{2}{3}$–$3\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Teapa in Tabasco and Yucatan (*coll. Janson*).

A male from Teapa and a female from Yucatan. This species is perhaps nearest allied to *M. cribulosus*, Lec., from Nebraska, which has the fifth ventral segment similarly sculptured, but differs from that insect in having two (instead of three) irregular rows of punctures on each of the elytral interstices. The antennæ are more slender than usual in the male; they are not ciliate on their inner edge, but this may be due to abrasion.

## Group **ATHOINI.**

### LIMONIUS.

*Limonius*, Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829); Candèze, Monogr. Elat. iii. p. 377.
*Gambrinus*, Leconte, Trans. Am. Phil. Soc. new ser. x. p. 435 (1853).
*Pheletes*, Kiesenwetter, Naturg. Ins. Deutschl. iv. p. 329 (1858).

A holarctic genus containing fifty-two described species, thirty-three of which are American, one only of these being from our region, whence a second is now added.

#### 1. **Limonius quadraticollis.**

*Limonius quadraticollis*, Cand. Monogr. Elat. iii. p. 412, t. 5. fig. 10[1].

*Hab.* Mexico, Cordova and Tuxtla (*Sallé*[1]), Jalapa and Playa Vicente (*Höge*).

Not uncommon in the State of Vera Cruz, whence we have received a good series of both sexes. These specimens vary from $7\frac{1}{2}$–11 millim. in length. *L. quadraticollis* has the basal joint of the tarsi a little more elongate than usual in the genus.

#### 2. **Limonius longulus.** (Tab. XX. fig. 8, ♂, var.)

Elongate, narrow (♂), or moderately broad (♀), subopaque; piceous, the prothorax with the anterior angles or the sides slightly rufescent, the antennæ black; thickly clothed with long cinereous hairs, which on the upper surface are partly decumbent and partly semierect. Head densely, rather coarsely punctate; the front depressed in the middle, rounded and prominent on either side, the carina obliterated in the centre; antennæ rather more than half the length of the body in the male, extending very little beyond the hind angles of the prothorax in the female, the joints from the fourth considerably widened, becoming longer and narrower outwards in the male, joint 3 small, slightly longer than 2. Prothorax almost square, feebly sinuate at the sides behind; the anterior angles somewhat broadly rounded and produced in front; the hind angles short, subacute, not carinate; the surface densely, rather coarsely punctate; the basal median lobe extending as far backwards as the hind angles. Elytra about three and one-fourth times the length of the prothorax, and much wider than it, flattened on the disc, very gradually narrowing from the base in the male, much broader and widest beyond the middle in female; coarsely punctate-striate, the striæ shallow, the interstices flat and densely, rather coarsely punctate. Beneath closely, moderately coarsely punctate. The basal joint of the hind tarsi a little longer than the second.

*Var.* The pronotum and propleuræ entirely rufous.

Length 7–$8\frac{1}{8}$, breadth $1\frac{7}{8}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Juquila in Oaxaca (*Sallé*).

Three males and one female, one of the males belonging to the variety. Allied to *L. quadraticollis*, which also has the anterior angles of the thorax rounded and considerably produced in front; but differing from it in the dense punctuation of the upper surface, the coarser pubescence, the non-carinate hind angles of the thorax, the flatter elytra, &c. The males are much narrower than the same sex of that species, with longer and stouter antennæ, and the elytra gradually narrowing from the base. The female is much broader than the male, with the elytra widening to beyond the middle, the front less prominent, and the antennæ short.

## ATHOUS.

*Athous*, Eschscholtz, in Thon's Archiv, ii. 1, p. 33 (1829); Candèze, Monogr. Elat. iii. p. 416; Cat. Méthod. Elat. p. 150 *.

A genus containing a very large number of species, all but four of which are from the Palæarctic or Nearctic regions. From America, south of the United States, three only have hitherto been described—one from Mexico, one from Ecuador, and one from Chili. The genus, however, proves to be fairly well represented in Mexico and Guatemala, whence ten are now recorded. The Central-American species belong to two well-defined groups—one with the third tarsal joint lamellate, and the other with the tarsi simple; some of those appertaining to the first group differ from all their allies in the very long and acute hind angles of the thorax, the angles being strongly recurved in *A. photinoides* and *A. campanulatus*. The first group will probably have to be separated eventually from *Athous*; the genus, however, already includes species with the second and third tarsal joints more or less lamellate. The species here referred to *Athous* agree in the following characters:—front excavate, prominent, truncate or emarginate (*A. carinicollis*) at the apex; antennæ with the third joint small, the fourth and succeeding joints subequal in length; posterior coxal plates narrow, gradually widening inwards; tarsi simple, or with the third joint lamellate, the basal joint elongate. Amongst the new species here described, *A. photinoides* may be known by its mimetic resemblance to the Lampyrid genus *Photinus*, and *A. carinicollis* by the transversely carinate thorax.

*a*. Tarsi with the third joint lamellate, the fourth very small; front truncate or feebly emarginate.
  *a'*. Hind angles of the prothorax very elongate, acute.
    *a''*. The angles not or obsoletely carinate.
      *a'''*. Prothorax transverse, with the hind angles strongly recurved at the tip, the sloping lateral portions velvety-pubescent; body black, the prothorax rufous, with two black vittæ, the last two ventral segments yellow; antennæ with the joints from the third broad and strongly serrate . . . . . *photinoides*.
      *b'''*. Prothorax longer than broad; body brown.
        *a⁴*. Hind angles strongly recurved at the tip; prothorax campanulate, rather coarsely punctured . . . . . *campanulatus*.
        *b⁴*. Hind angles less elongate, scarcely recurved at the tip; prothorax more parallel, more finely punctured . . . . . *mexicanus*.
    *b''*. The angles distinctly carinate, slightly recurved at the tip; prothorax longer than broad, subcampanulate; body brown . . . . . *æquinoctialis*.

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* For the synonymy, see Candèze, *loc. cit.*

*b'*. Hind angles of the prothorax moderately produced, acute.
*c''*. The angles distinctly carinate; body brown.
*c'''*. Propleuræ very sparsely punctured, smooth in the middle . . . . . *marcidus.*
*d'''*. Propleuræ closely punctured throughout . . . . . *aztecus.*
*d''*. The angles not carinate; body piceous or pitchy-black, the prothorax partly rufous; elytra rugose . . . . . *rugipennis.*
*b*. Tarsi simple.
*c'*. Prothorax longer than broad, not transversely carinate before the base; the hind angles short, rather obtuse, and feebly carinate; front truncate.
*e''*. Body piceous or pitchy-brown; prothorax subparallel . . . . . *angusticollis.*
*f''*. Body black; prothorax narrowing forwards . . . . . *funestus.*
*d'*. Prothorax not so long as broad, with a sharp, transverse, sinuous carina before the base; the hind angles longer, acute, and recurved at the tip, not carinate; front deeply emarginate; body black . . . . . *carinicollis.*

## 1. **Athous photinoides.** (Tab. XX. figg. 9, 10, ♀.)

♀. Elongate, rather broad, subopaque above (a narrow space down the middle of the prothorax excepted), shining beneath, black; the prothorax rufous or obscure rufous, with the apical, basal, and lateral margins, the hind angles, and two vittæ on the middle of the disc, black or piceous, the fourth and fifth ventral segments yellow, the propleuræ in great part rufous; the head, elytra, and under surface clothed with fine, short, fuscous pubescence, that on the propleuræ and on the last two ventral segments paler; the prothorax with longer and denser pubescence, that on the rufous lateral portions velvety, and golden in colour in certain lights. Head densely, coarsely punctate, deeply triangularly excavate in front, the front moderately prominent and truncate at the apex, the eyes comparatively small; antennæ rather short, extending to a little beyond the humeri, the joints from the third broadly widened and subtriangular, becoming narrower and more parallel outwards, 3 as long as 4. Prothorax broad, transverse, rather convex, campanuliform; the hind angles greatly produced, divergent, narrow, acute and strongly recurved at the tip, not carinate; the surface very closely, finely punctate, the punctuation becoming coarser towards the sides behind and along the middle of the disc, down the centre of which is a smooth, shining, more or less distinctly canaliculate space. Scutellum densely punctured. Elytra three and one-half times the length of the prothorax, and of about the same width as the latter at the base, broadly flattened on the disc, sharply margined at the sides, subparallel to the middle, and gradually narrowing thence to the apex, the apices rounded; extremely finely and lightly punctate-striate, the interstices quite flat throughout, densely, rugulosely punctate, and at the base finely granulate. Beneath somewhat thickly, finely punctate, the punctures on the prosternum coarser, the rufous portion of the propleuræ densely and very finely punctured. Legs rather stout, moderately long; the third joint of the tarsi slightly dilated and sublamellate, the basal joint of the hind pair a little longer than the following three joints united, the fourth joint very small.

Length $10\frac{1}{2}$–$14\frac{1}{2}$, breadth 3–$4\frac{1}{4}$ millim.

*Hab.* GUATEMALA, Totonicapam 8500 to 10,500 feet (*Champion*), Tecpan 7000 feet (*Conradt*).

Thirteen specimens, all of which appear to be females. This remarkable insect bears a great resemblance to *Photinus guatemalæ*, Gorh.—a species of Lampyridæ occurring at the same locality,—not only in general appearance, but also in the sculpture of the elytra and in the colour of the abdomen. It resembles the Chilian *Campyloxenus pyrothorax*, Fairm. & Germ.* (?=*Pyrophorus megalophysus*, Philippi), from which it

* *Campyloxenus pyrothorax* has a prominent chin-piece to the prosternum; it is allied to *Pyrophorus*.

differs in the very small fourth joint and the lamellate third joint of the tarsi. The present species agrees structurally with *Athous*, but it possesses a very different facies from any member of that genus known to me; the elongate, upturned hind angles of the thorax is a character common to some of the other Central-American forms. From *Pyrophorus* it may be known by the form of the tarsi and the prominent front. The pubescence on the thorax is combed as it were in different directions, and velvety in appearance, appearing golden in certain lights. The coloration of the abdomen suggests the possibility of the insect being luminous, but this is probably not the case. In Dr. Cardèze's opinion *A. photinoides* should form the type of a new genus.

### 2. **Athous campanulatus.** (Tab. XX. fig. 11, ♀.)

♀. Very elongate, rather broad, shining, reddish brown, sparsely and finely pubescent. Head densely, somewhat coarsely punctate, triangularly depressed in front; the front moderately prominent, truncate at the apex; the eyes moderately large; antennæ slender, extending to a little beyond the humeri, joint 3 as long as 4. Prothorax distinctly longer than broad, slightly narrowed in front, moderately rounded at the sides, the latter strongly sinuate behind; the hind angles very elongate, narrow, and strongly divergent, acute and recurved at the tip, with indications of a fine carina anteriorly; the surface closely and somewhat coarsely punctate, the punctuation becoming denser and umbilicate at the sides and base, the disc with a narrow longitudinal space down the median third and a small space on either side of it about the middle impunctate. Elytra three times the length of the prothorax, and a little wider than it, subparallel to about the middle, and gradually narrowing beyond, flattened on the disc, the apices subtruncate; finely punctate-striate, the interstices moderately convex, rather sparsely punctured, and transversely rugulose, granulate at the base. Beneath thickly punctured, the metasternum smoother, the punctures rather coarse on the prosternum, coarse and umbilicate on the propleuræ, and fine elsewhere. Third tarsal joint sublamellate, the fourth very small.

Length 13, breadth $3\frac{1}{3}$ millim.

*Hab.* GUATEMALA, Totonicapam 10,000 feet (*Champion*).

One specimen, probably found under pine-bark. It has, unfortunately, the right elytron abnormally formed. It is allied to *A. mexicanus*, of which the male only is known, but differs from that insect in having the thorax more coarsely punctured, with the hind angles more elongate and strongly recurved at the tip. The thorax is elongate-campanuliform in shape.

### 3. **Athous mexicanus.** (Tab. XX. fig. 12, ♂.)

*Athous mexicanus*, Cand. Monogr. Elat. iii. p. 433 (♂)[1].

*Hab.* MEXICO, Jacale in Vera Cruz (*Sallé*[1]), Jalapa (*Höge*).

The type of this species is contained in the Sallé collection, and we have also received an example of it from Herr Höge; both are males. In this insect the hind angles of the thorax are very greatly produced, narrow, and divergent, and obliquely, obsoletely carinate anteriorly; the third tarsal joint is lamellate, the basal joint nearly as long as the four others united.

### 4. **Athous æquinoctialis.** (Tab. XX. fig. 13, ♀.)

Elongate, rather narrow, moderately shining, finely pubescent; brown or reddish-brown, the front of the head, the hind angles of the prothorax, and the extreme base of the elytra more or less ferruginous, the legs and antennæ testaceous or fusco-testaceous. Head thickly, rather coarsely punctate, depressed in front, the depression sometimes separated in the middle by a longitudinal ridge; the front prominent, subtruncate at the apex; the eyes large; antennæ rather slender, extending considerably beyond the humeri in the male, shorter in the female. Prothorax moderately convex, a little longer than broad, gradually narrowing from about the middle forwards, the sides rounded in front and sinuate behind; the hind angles long, narrow, and divergent, acute and slightly recurved at the tip, rather sharply carinate; the surface finely and somewhat thickly punctate, the punctuation becoming closer and coarser at the sides, deeply canaliculate down the middle. Elytra nearly three times the length of the prothorax, and of the same width at the base, narrowing from a little below the shoulders in the male, more parallel in front in the female, the apices obliquely truncate, with the outer apical angle rounded; finely punctate-striate, the interstices moderately convex and sparsely punctate. Beneath, the propleuræ included, thickly, finely punctate. Third tarsal joint lamellate, the fourth very small.

Length 9–10, breadth $2\frac{1}{5}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*); Guatemala, San Gerónimo and Calderas (*Champion*).

A male from San Gerónimo and a female from each of the other localities. This insect is allied to *A. mexicanus*, but it is less depressed; the thorax has the sides more rounded in front and more sinuate behind (the general shape being subcampanulate), with the hind angles slightly upturned at the tip; and the elytra are less parallel, narrowing almost from the base in the male, with the apices obtuse. Compared with *A. campanulatus* it differs in its much smaller size, and in having shorter, distinctly carinate hind angles to the thorax.

### 5. **Athous marcidus.**

Moderately elongate, narrow, shining, finely and rather sparsely pubescent; brown, the front of the head, the hind angles of the prothorax, and the extreme base and suture of the elytra paler; the underside castaneous or reddish-brown; the antennæ fusco-testaceous, with the basal joint testaceous, the legs pale testaceous. Head thickly, somewhat finely punctate, triangularly depressed in front; the front moderately prominent; the eyes not very large; antennæ slender, extending to some distance beyond the humeri. Prothorax as long as broad, somewhat obliquely narrowing from the basal third forwards, and sinuate at the sides behind; the hind angles moderately produced, acute, and divergent, slightly recurved at the tip, and sharply carinate; the surface very finely and rather sparsely punctate, obsoletely canaliculate behind. Elytra three times the length of the prothorax, and of the same width at the base, narrowing from about the basal third, rounded at the apex; punctate-striate, the interstices feebly convex and somewhat roughly punctured, granulate at the base. Beneath very sparsely and finely, the ventral segments more closely, punctate, the propleuræ smooth in the middle. Third tarsal joint dilated and lamellate, the fourth very small.

Length 7–$7\frac{1}{2}$, breadth $1\frac{7}{8}$ millim.

*Hab.* Mexico, Oaxaca (*Höge*).

Two examples, probably males. Allied to *A. æquinoctialis*, but smaller and less elongate; the thorax more conical in shape (it being more narrowed and less rounded at the sides anteriorly), more finely punctured, and indistinctly canaliculate behind; the under surface much more sparsely punctate, the propleuræ smooth in the middle.

### 6. **Athous aztecus.**

Moderately elongate, narrow, slightly shining, finely pubescent; pitchy-brown, the front of the head, the hind angles of the prothorax, and the extreme base of the elytra obscure ferruginous; beneath piceous, reddish-brown at the sides; the antennæ and legs testaceous. Head closely, somewhat coarsely punctate, depressed in front; the front prominent, broadly truncate at the apex; the eyes large; antennæ rather slender, extending to considerably beyond the humeri. Prothorax a little longer than broad, with the sides slightly converging and feebly rounded in front and sinuate behind; the hind angles moderately produced, divergent, acute, and slightly recurved at the tip, and rather sharply carinate; the surface closely and somewhat finely punctured, the punctuation becoming a little more diffuse on the disc in front, obsoletely canaliculate behind. Elytra two and three-fourths the length of the prothorax, and of about the same width at the base, narrowing from a little before the middle to the apex, the apices rounded; punctate-striate, the interstices feebly convex and somewhat thickly punctured, granulate at the base. Beneath, the propleuræ included, closely punctured. Third tarsal joint dilated and lamellate, the fourth very small.

Length $8\frac{1}{4}$, breadth $2$–$2\frac{1}{8}$ millim.

*Hab.* Mexico, Juquila in Oaxaca (*Sallé*).

Two examples, no doubt males. Allied to *A. marcidus*, but broader and duller, and also differing from that insect in its larger eyes, the more prominent front, the closely and much more distinctly punctured thorax, which is more rounded at the sides in front and has shorter hind angles, the closely punctured under surface, &c.

### 7. **Athous rugipennis.** (Tab. XX. fig. 14, ♂.)

Moderately elongate, narrow, subopaque, somewhat thickly clothed with yellowish-cinereous pubescence, piceous or pitchy-black, the head in front and the sides of the prothorax broadly pitchy-red, the head and prothorax sometimes ferruginous or obscure rufous, and the latter with an abbreviated median vitta only piceous; beneath shining, piceous, the propleuræ sometimes obscure rufous; antennæ pitchy-black, the basal joint sometimes ferruginous; legs pale testaceous, the tarsi and the apices of the tibiæ infuscate in one example. Head closely, moderately finely punctate, excavate in front; the front prominent, subtruncate in the middle at the apex; the eyes moderately large; antennæ rather stout, about two-fifths of the length of the body in the male, shorter in the female. Prothorax as long as broad, narrowing from about the middle forwards, the sides rounded anteriorly and feebly sinuate behind; the hind angles moderately produced, acute, not or very slightly divergent, and not carinate; the surface closely and finely punctate throughout, and canaliculate before the base. Elytra three times the length of the prothorax, and of the same width at the base, narrowing from a little before the middle to the apex, the apices rounded; deeply punctate-striate, the interstices rugose and rather convex. Beneath closely punctured. Legs slender; third tarsal joint dilated and lamellate, the fourth very small.

Length 6–$6\frac{1}{2}$, breadth $1\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* Guatemala, Purula in Vera Paz (*Champion*).

Three examples. This small species differs greatly from the other Central-American members of the genus. The colour of the head and thorax is variable, the rufous colour predominating in two examples. Dr. Candèze has examined one of them, and he suggests an affinity with *Eudactylus*; but I can find nothing to distinguish the insect structurally from *Athous mexicanus* and its allies.

### 8. **Athous angusticollis.**

♂. Very elongate, shining, somewhat sparsely pubescent; piceous, paler beneath, the elytra brown or pitchy-brown, the antennæ, legs, and epipleuræ reddish-brown. Head closely, rather finely punctate, very deeply triangularly excavate in front; the front prominent, broadly truncate at the apex; the eyes large; antennæ moderately stout, serrate, extending to about the basal fifth of the elytra. Prothorax considerably longer than broad, subparallel, slightly sinuate at the sides behind; the hind angles divergent, not much produced, rather obtuse, and finely carinate; the surface closely, moderately finely punctate, the punctuation becoming more crowded and umbilicate towards the sides and base, the disc transversely flattened or depressed in the middle at the apex and feebly canaliculate behind. Elytra three times the length of the prothorax, and much wider than it, flattened on the disc, gradually narrowing from the middle to the apex, the apices rounded; punctate-striate, the interstices moderately convex and thickly punctured. Beneath closely punctured, the punctures on the propleuræ coarse and umbilicate. Tarsi simple.

Length $10\frac{3}{4}$–12, breadth $2\frac{2}{3}$–3 millim.

*Hab.* Mexico, Pinos Altos in Chihuahua, Rio Mescales (*Buchan-Hepburn*).

Two examples. In its long narrow thorax, deeply triangularly excavate front, simple tarsi, &c., this insect approaches the North-American *A. ferruginosus*, Eschsch., and *A. cribratus*, Lec., but differs from both of them in having the thorax more finely punctured, with the hind angles finely carinate. The elytral sculpture resembles that of *A. ferruginosus*, except that the striæ are not so coarsely punctured.

### 9. **Athous funestus.** (Tab. XX. fig. 15, ♂.)

♂. Elongate, depressed, subopaque; black or pitchy-black, the legs piceous, the claws testaceous; somewhat thickly clothed with long, decumbent, fuscous hairs. Head densely, coarsely punctate, deeply excavate in front; the front prominent, broadly truncate at the apex; the eyes moderately large; antennæ rather short, extending to a little beyond the humeri, the joints from the third dilated and strongly serrate, 3 as long as 4. Prothorax slightly longer than broad, gradually narrowing from the base, the sides almost straight, feebly sinuate behind; the hind angles short, obtuse, slightly divergent, and feebly carinate, the carina placed near the margin and not extending to the tip; the surface densely and rather coarsely umbilicate-punctate, the punctuation becoming a little more diffuse on the middle of the disc in front. Elytra three times the length of the prothorax, and considerably wider than it, subparallel to the middle; finely punctate-striate, the interstices flat, transversely rugulose, and thickly punctured. Beneath closely punctured. Tarsi simple, the basal joint of the hind pair about as long as the following three joints united.

Length 10–$10\frac{1}{2}$, breadth $2\frac{3}{4}$–3 millim.

*Hab.* Mexico, Ciudad in Durango (*Forrer*).

Three examples, all males. This species somewhat resembles *A. scissus*, Lec., from California; but it is more depressed, the thorax is straighter at the sides and gradually narrowed from the base, the elytra are much more finely punctate-striate, and the third tarsal joint is simple.

### 10. **Athous carinicollis.** (Tab. XX. figg. 16, ♂; 16 *a*, prothorax.)

Elongate, rather depressed, subopaque, black or pitchy-black, the legs piceous, with the tarsi partly or entirely testaceous; clothed with fine, fuscous pubescence. Head densely and coarsely umbilicate-punctate; the front concave, prominent, deeply emarginate in the middle; the eyes moderately large; antennæ slender, rather more than half the length of the body in the male, much shorter in the female, joint 3 as long as 4.

Prothorax slightly broader than long in the male, more transverse in the female, gradually narrowing from the base, the sides rounded anteriorly; the hind angles moderately produced and strongly divergent in the male, much shorter and not divergent in the female, acutely recurved at the tip in both sexes, not carinate; the surface densely and coarsely umbilicate-punctate, obsoletely canaliculate behind, and with a sharp, transverse, sinuous carina before the base extending on either side to near the lateral margin, the space between this and the base strongly declivous and more finely punctured. Elytra a little more than three times the length of the prothorax, and of about the same width at the base, subparallel to the middle in both sexes; finely punctate-striate, the interstices flat, transversely rugulose and closely punctured. Beneath closely punctured. Legs slender; tarsi filiform, the basal joint of the hind pair about as long as the following three joints united.

Length $6\frac{1}{2}$–$7\frac{3}{4}$, breadth $1\frac{3}{4}$–$2\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo 4600 feet, and Omilteme 8000 feet, both in Guerrero (*H. H. Smith*).

A male from Chilpancingo and a female from Omilteme. This species may be at once recognized by the long, sharp, sinuous, transverse carina near the base of the thorax. The head appears bilobed in front, owing to the deep emargination in the centre. In this respect the insect resembles the two Mexican species of *Limonius*, but differs from them in the more elongate basal joint of the tarsi; it is therefore best placed in *Athous*.

## ACANTHATHOUS.

Head with a prominent, truncate frontal plate, and deeply excavate; mandibles bifid; antennæ with the second joint very small, the others elongate and subequal; prothorax with exceedingly elongate, narrow, divergent hind angles, which are recurved at the tip; elytra broadly truncate at the apex, the outer apical angle armed with a long sharp spine; prosternum broad, with a broadly rounded, prominent chin-piece, the process moderately long, horizontal, the sutures straight and single; mesosternum depressed, the cavity long and deep, the sides not thickened; posterior coxal plates narrow, gradually widening inwards; fifth ventral segment armed with a long spine at the apex; tarsi slender, the third joint widened and sublamellate, the fourth very small, the basal joint as long as the following three joints united.

The above characters are taken from a single species from the Pacific slope of Guatemala. In the excessively elongate hind angles of the thorax, and the spinous apex of the elytra and last ventral segment, it approaches the eastern genus *Pachyderes*, belonging to the group Eudactylini, near which the insect ought to be placed, in Dr. Candèze's opinion. The form of the front, the slender tarsi, with lamellate third joint, the narrow coxal plates, &c., seem to me, however, to bring it much nearer *Athous*. As a matter of fact, it only differs from *Athous mexicanus* and its allies in the still more elongate hind angles of the thorax and the spinous apex of the body.

### 1. **Acanthathous pachyderoides.** (Tab. XX. fig. 17, ♂.)

Elongate, narrow, moderately convex, shining; piceous or pitchy-brown, the head sometimes reddish-brown in front; the elytra pitchy-brown or brown, with nearly the apical half indeterminately fulvous or reddish-brown, this colour in some specimens extending forwards along the suture and on the outer part of the disc; the abdomen in great part fulvous or reddish-brown; the antennæ and legs reddish-brown or fusco-testaceous; above and beneath sparsely clothed with fine decumbent fulvo-cinereous pubescence.

Head thickly, finely punctate, deeply triangularly excavate in front; the front prominent, broadly truncate at the apex; the eyes large; antennæ slender, about half the length of the body in the male, much shorter in the female, joint 2 very short, 3 elongate, as long as 4. Prothorax as long as broad, very gradually narrowing from the base in the male, a little more rounded at the sides in the female, the sides sharply margined; the hind angles excessively elongate, narrow, strongly divergent, acute, and recurved at the tip, carinate, the carina not quite reaching the apex; the surface finely and rather sparsely punctured, the punctuation becoming coarser and closer at the sides behind, obsoletely canaliculate down the middle in some specimens. Elytra three times the length of the prothorax, and of about the same width as it at the base, obliquely narrowing from about the middle, depressed at the base near the scutellum, and broadly truncate at the apex, with the outer apical angle produced into a long, sharp spine, and the inner angle subacute; finely punctate-striate, the interstices convex, flatter towards the suture, finely and rather sparsely punctate, subgranulate on the basal declivity. Beneath finely and rather sparsely punctured; fifth ventral segment armed with a long, sharp spine in the centre at the apex.

Length 9–10½, breadth 2¼–2⅔, to tips of the hind angles of the prothorax 3–3¾ millim. (♂ ♀.)

*Hab.* GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

Ten examples.

## Group **PYROPHORINI.**

## PYROPHORUS.

*Pyrophorus,* Illiger, Mag. Ges. nat. Freund. i. p. 141 (1809); Germar, Zeitschr. für Ent. iii. p. 1; Candèze, Monogr. Elat. iv. p. 3; Cat. Méthod. Elat. p. 157.
*Hypsiophthalmus,* Latreille, Ann. Soc. Ent. Fr. iii. p. 145 (1834).
*Belania,* Castelnau, Hist. Nat. Ins., Col. i. p. 236 (1840).
*Stilpnus,* Castelnau, loc. cit.
*Phanophorus,* Solier, in Gay's Hist. fis. y polit. de Chile, Zool. v. p. 26 (1851).

This remarkable genus, characteristic of the warmer regions of the New World, contains eighty-five * described species, eleven only of which inhabit Central America, to which five others are now added. One species inhabits the Southern United States and Northern Mexico, and a few occur in Chili, Uruguay, and the Argentine Republic, the remainder being confined to the tropical portions of the American continent and the Antilles. With the exception of two allied forms found in the New Hebrides and the Fiji Islands, belonging to the genus *Photophorus*, Cand., and two from New Caledonia described by M. Fleutiaux, probably not really appertaining to *Pyrophorus*, the luminous Elateridæ are entirely absent from the Old World. In some few species included in *Pyrophorus* by Dr. Candèze the luminous vesicles on the thorax are indistinct or obsolete two of these forms—*P. melanoxanthus* and the Colombian *P. abnormis*, Cand., which also differ in the form of the meso- and metasternum,—are here treated as generically distinct under the name *Alampes*.

The Central-American *Pyrophori* belong to Sections I. or II. of Candèze, his Sections III.–VII. not being represented within our limits. The various species are very closely allied, and in some cases difficult to separate, but many of them can be easily

* The two species from New Caledonia are not counted.

identified by the form of the genitalia of the males *, figures of these parts of all but one of the Central-American representatives being given on our Plate. The form of the sterna also affords good differential characters in certain species, as in *P. noctilucus*, *P. stella*, *P. radians*, &c. The luminous vesicles are raised and very prominent in the first section, flatter and less distinct, rarely obsolete, in the second section. The abdomen is also luminous at the base in various *Pyrophori*, the membranous luminous space varying in extent according to the species; but the luminous portion is not visible in dried specimens till the abdomen is removed, it being sometimes reduced (*P. radians*) to a very narrow space immediately beneath the intercoxal process, and in others (*P. strabus*) extending across nearly the entire width of the segment. The terminal dorsal segment is probably luminous in *P. strabus* and others. So far as I have noticed myself, the thoracic vesicles emit a greenish light and the abdomen a reddish light in one of the large species, *P. pellucens*, a common Central-American insect.

From Mexico one species only, *P. occidentalis*, is known from the Pacific coast, the others inhabiting the central plateau or the Atlantic slope. No *Pyrophorus* has been noticed as yet on the Pacific slope of Guatemala.

These insects, known everywhere in Central America under the name of "Cocuyos," have a much more rapid flight than the luminous Lampyridæ, and they emit a steady light, instead of an intermittent one, the light being brilliant in both sexes. They fly for a short time after dark; the smaller forms may be taken in plenty a little later in the evening at rest upon leaves.

*a*. Antennæ very short in both sexes, the third joint shorter than the fourth; prothorax broader than long, with prominent raised vesicles.
  *a'*. Propleuræ not marked with yellow beneath the vesicles.
    *a''*. The vesicles placed close to the lateral margin, and parallel with it; prosternum declivous behind . . . . . *noctilucus*.
    *b''*. The vesicles distant from the lateral margin, oblique; prosternum not declivous behind . . . . . *strabus*.
  *b'*. Propleuræ marked with yellow or reddish-yellow beneath the vesicles; prosternum not declivous behind.
    *c''*. Elytra not more than three times the length of the prothorax; the latter convex.
      *a'''*. Elytra sharply mucronate at the apex; prothorax densely punctured, the sides rounded or feebly sinuate: size large . . . . . *pellucens*.
      *b'''*. Elytra feebly mucronate at the apex; prothorax more sparsely punctured, the sides distinctly sinuate: size smaller . . . . . *indistinctus*.
    *d''*. Elytra more than three times the length of the prothorax, sharply mucronate at the apex; prothorax moderately convex, sinuate at the sides, and densely punctured: size large . . . . . *clarus*.

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* Schwarz, Deutsche ent. Zeitschr. 1892, t. 2, has figured the male genitalia of a large number of Palæarctic Melanotini: these, however, show very little diversity in structure.

*b.* Antennæ more elongate, reaching to the hind angles of the prothorax, or to beyond them, in the males, the third joint shorter than the fourth; prothorax as long as, or longer than, broad, with or without vesicles, the latter less prominent; the propleuræ yellow beneath them; prosternum not declivous behind.

*c'*. Third antennal joint very short, not longer than the second; prothorax with moderately large vesicles.

*e''*. Prothorax in the female with, at most, a small tubercle in the centre at the base, the surface moderately coarsely, somewhat sparsely punctate; elytra finely or rather coarsely punctate-striate . . . . . *fulgidus.*

*f''*. Prothorax in the female with a prominent laterally compressed tubercle in the centre at the base, the surface densely, coarsely punctate; elytra coarsely punctate-striate . . . . . *sirius.*

*d'*. Third antennal joint distinctly longer than the second.

*g''*. Prothorax with well-defined vesicles.

*c'''*. Elytra distinctly divaricate and sharply mucronate at the apex.

*a*⁴. Mesosternum with the sides of the cavity strongly raised behind; prothoracic vesicles small, the hind angles stout . . . . . *caudatus.*

*b*⁴. Mesosternum declivous; prothoracic vesicles large and raised, the hind angles narrow and abruptly divergent . . . . . *havaniensis.*

*d'''*. Elytra not or feebly divaricate at the apex.

*c*⁴. Prothorax with a laterally compressed tubercle in the centre at the base; elytra conjointly rounded at the apex.

*a*⁵. Antennæ extending very little beyond the hind angles of the prothorax in the male.

*a*⁶. The prothorax with the vesicles moderately large or small, and distinctly raised, the tubercle at the base elongate and prominent; the elytra moderately long . . . . . *ornamentum.*

*b*⁶. The prothorax with the vesicles very large and raised, the tubercle at the base shorter and abruptly raised in front; the elytra less elongate . . . . . *occidentalis.*

*b*⁵. Antennæ extending considerably beyond the hind angles of the prothorax, and also less dilated, in the male; the prothorax with the vesicles small and not or very feebly raised, the tubercle at the base small . . . . . *mexicanus.*

*d*⁴. Prothorax with a conical or transversely compressed tubercle in the centre at the base, the vesicles not prominent.

*c*⁵. Antennæ extending very little beyond the hind angles of the prothorax in the male.

*c*⁶. Prothorax densely punctured, the tubercle at the base small; antennæ shorter in the male; elytra obsoletely mucronate at the apex . . . . . *physoderus.*

*d*⁶. Prothorax more sparsely punctured, the tubercle at the base more prominent; antennæ longer in the male; elytra finely mucronate at the apex . . . . . *stella.*

$d^5$. Antennæ extending considerably beyond the hind angles of the prothorax in the male; the tubercle at the base of the latter prominent; elytra mucronate at the apex . . . . . *radians.*

$h''$. Prothorax without distinct vesicles; upper surface testaceous or rufo-testaceous, with a broad median vitta on the prothorax, the scutellum, and the elytra at the sides from before the middle to the apex, broadly, black . . . . . *restinctus.*

### 1. **Pyrophorus noctilucus.** (Tab. XX. fig. 18, genitalia, ♂.)

*Elater noctilucus,* Linn. Syst. Nat. 10th edit. i. p. 404 (1758)[1]; De Geer, Mém. Ins. iv. p. 160, t. 18. fig. 11 (1774)[2]; Oliv. Ent. ii. no. 31, p. 15, t. 2. fig. 14 *a*[3]; Herbst, Käfer, ix. p. 331, t. 158. fig. 1[4].

*Pyrophorus noctilucus,* Eschsch. in Thon's Archiv, ii. 1, p. 32[5]; Germ. Zeitschr. für Ent. iii. p. 13[6]; Cand. Monogr. Elat. iv. p. 14[7].

*Pyrophorus divergens,* Eschsch. loc. cit. p. 32[8].

*Pyrophorus nyctophanus,* Germ. loc. cit. p. 12[9].

*Pyrophorus phosphorescens,* Germ. loc. cit. p. 19[10].

*Hab.* Mexico (*Sallé, ex coll. Sturm*); Costa Rica (*Van Patten*).—Tropical South America[2 3 4 7] to Brazil[5 8 9]; Antilles[4 6 7], Cuba, San Domingo, Jamaica[2 9], Guadeloupe[9 10].

There is a specimen of this species (mixed with the series of *P. strabus*) in the Sallé collection, from that of Sturm, labelled "Mexico"; and we have received another from Van Patten, as from Costa Rica. This is the only evidence we have of this species occurring in Central America, where it is replaced by *P. pellucens.* The Mexican habitat requires confirmation. In *P. noctilucus* the prosternum is raised on either side between the coxæ and declivous behind them, the process thence to the apex being horizontal; in the allied *P. pellucens* the prosternum is not declivous behind the coxæ, and the process is extended horizontally from the intercoxal portion.

### 2. **Pyrophorus strabus.** (Tab. XX. figg. 19, genitalia, ♂; 19 *a*, base of abdomen.)

*Pyrophorus strabus,* Germ. Zeitschr. für Ent. iii. p. 15[1]; Sturm, Cat. p. 67[2]; Cand. Monogr. Elat. iv. p. 16[3].

*Pyrophorus laternarius,* Sturm, in litt.

*Hab.* Mexico[1 2 3] (*Sallé, ex coll. Sturm*), Santecomapan, Cosamaloapam, Teapa, Oaxaca (*Sallé*), Misantla, Jalapa (*Höge*); British Honduras (*Blancaneaux*).

Not uncommon in Eastern Mexico, and also extending into British Honduras, whence we have received two specimens. This species resembles *P. pellucens*, but has larger and more oblique vesicles on the thorax, the flanks of the latter immaculate, and the abdomen, when detached from the body, shows a much broader luminous space at the

base; the terminal dorsal segment is pallid in colour and, no doubt, also luminous. In the form of the genitalia of the males it differs greatly from *P. pellucens*, in this respect showing a close affinity with *P. noctilucus*. *P. strabus* probably has greater luminous powers than any other known *Pyrophorus*.

3. **Pyrophorus pellucens.** (Tab. XX. figg. 20, genitalia, ♂; 21, genitalia, ♀; 21 *a*, base of abdomen.)

*Pyrophorus pellucens*, Eschsch. in Thon's Archiv, ii. 1, p. 32 [1]; Germ. Zeitschr. für Ent. iii. p. 17 [2]; Cand. Monogr. Elat. iv. p. 18 [3].

*Pyrophorus surinamensis*, Sturm, Cat. p. 67 (1843) [4].

*Pyrophorus luscus*, Cand. Ann. Soc. Ent. Belg. 1889, p. 113 (Elat. Nouv. iv. p. 47) [5].

*Hab.* MEXICO (*coll. Janson, ex Dejean*), Playà Vicente, Chiapas (*Sallé*), Misantla (*Höge*), Atoyac, Teapa (*H. H. Smith*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA [5], Yzabal (*Sallé*), Cubilguitz, Coban, Senahu, San Juan, Chacoj, Panima, and Purula, all in Vera Paz (*Champion*); NICARAGUA, Chontales (*E. M. Janson*); COSTA RICA (*Pittier, in Mus. Brit.; Sallé, Van Patten*); PANAMA (*Salvin*), Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*Ribbe*).—COLOMBIA [2]; GUIANA [2 3 4]; ECUADOR; BRAZIL [1 2 3]; ? ANTILLES.

This is the common large fire-fly, or "cocuyo," of Central America. According to Dr. Candèze [3], it ranges from California to Rio Janeiro; the locality "California," however, requires confirmation, as we have no evidence of the insect occurring north of the Mexican State of Vera Cruz. *P. pellucens* is chiefly confined to the low country, it being seldom seen at a higher elevation than 3000 feet. The genitalia of the males are very differently formed from those of the closely-allied *P. noctilucus*. The flanks of the thorax are marked beneath the vesicles with orange-yellow, of which there is no trace in *P. noctilucus*. *P. luscus*, the types of which I have examined, does not differ from *P. pellucens*.

4. **Pyrophorus indistinctus.** (Tab. XX. fig. 22, genitalia, ♂.)

*Pyrophorus indistinctus*, Germ. Zeitschr. für Ent. iii. p. 20 [1]; Cand. Monogr. Elat. iv. p. 20 [2].

*Hab.* MEXICO, Teapa in Tabasco (*Sallé*); NICARAGUA, Chontales (*E. M. Janson*); COSTA RICA (*Van Patten*).—GUIANA, Demerara [2], Cayenne [1 2]; AMAZONS.

Seven examples of this insect have been received from within our limits. *P. indistinctus* is a very close ally of *P. pellucens*; but it is smaller, the thorax is more sparsely punctured and has the sides less rounded and more sinuate, and the apices of the elytra are more feebly mucronate. The genitalia of the males scarcely differ in form in the two insects. The two Teapa specimens are discoloured and in bad condition; they differ *inter se*, one of them not showing any trace of the light colour on the propleuræ.

### 5. **Pyrophorus clarus.** (Tab. XX. fig. 23, genitalia, ♂.)

*Pyrophorus clarus*, Germ. Zeitschr. für Ent. iii. p. 18[1]; Cand. Monogr. Elat. iv. p. 19, t. 1. fig. 5[2].
*Pyrophorus angustus*, Blanch. in d'Orbigny's Voyage dans l'Amér. mérid. vi. 2, p. 139[3].

*Hab.* Costa Rica (*Van Patten*), Caché (*Rogers*); Panama, Chiriqui (*Ribbe*).—Colombia, Bogota[1 2]; Venezuela; Ecuador; Bolivia[3].

We have received ten specimens of this species, nine from Costa Rica and one from Panama. *P. clarus* is closely allied to *P. pellucens*, but differs from that insect in its more elongate shape; the males have the thorax less convex, relatively narrower, less rounded at the sides, the latter being distinctly sinuate before the middle, and the hind angles more divergent. The genitalia of the males are very similar, as will be seen by a reference to our Plate.

### 6. **Pyrophorus fulgidus.** (Tab. XX. fig. 24, genitalia, ♂.)

*Pyrophorus fulgidus*, Germ. Zeitschr. für Ent. iii. p. 24 (♀)[1]; Cand. Monogr. Elat. iv. p. 22[2].
♂. *Pyrophorus adumbratus*, Germ. loc. cit. p. 27[3].

*Hab.* Costa Rica (*Pittier, in Mus. Brit.*); Panama, Bugaba, Volcan de Chiriqui (*Champion*), Chiriqui (*Ribbe*).—Colombia[1 2]; Venezuela[2]; Brazil[1 2 3]; Peru.

Of this species I have seen nine examples from within our limits. The males are very much smaller than the females. Some of the females have a small laterally compressed tubercle at the base of the thorax in the middle, of which there is little, if any, trace in the males.

*P. fulgidus* and the following species, *P. sirius*, are the only Central-American *Pyrophori* with the second and third joints of the antennæ very short and equal in length.

### 7. **Pyrophorus sirius.**

♀. *Pyrophorus sirius*, Cand. Compt.-rend. Soc. Ent. Belg. 1878, p. clxviii (Elat. Nouv. ii. p. 41)[1].
*Pyrophorus syrius*, Cand. Cat. Méthod. Elat. p. 158[2].

*Hab.* Costa Rica[1 2].

Dr. Candèze has kindly lent me the type (♀) of this species for examination. *P. sirius* is closely allied to *P. fulgidus*, from large-sized females of which it may be known by its more elongate shape, the more coarsely and more densely punctured thorax, the laterally compressed tubercle at the base of which is more prominent, and the coarsely punctate-striate elytra.

### 8. **Pyrophorus caudatus.** (Tab. XX. fig. 25, genitalia, ♂.)

Very elongate, rather narrow, moderately convex, shining, fusco-cinereo-pubescent; obscure castaneous, the elytra castaneous; the prothorax with a rather small, oval, slightly raised, yellow vesicle on either side before the base and distant from the lateral margin; the propleuræ with a large yellow patch behind;

the antennæ and legs brown. Head thickly, coarsely punctate, deeply triangularly depressed in front, the eyes large; antennæ strongly serrate, stout, and extending two joints beyond the hind angles of the prothorax in the male, less dilated and a little shorter in the female, the third joint twice the length of the second and about one-half the length of the fourth joint. Prothorax considerably longer than broad, flattened on either side of the middle of the disc; the sides feebly rounded and gradually converging in front and almost parallel behind; the hind angles long and strongly divergent, rather stout, finely carinate; the surface densely, finely punctate, the punctuation much more diffuse on the middle of the disc, down the centre of which are traces of a smooth, slightly impressed median line; the base with a rather prominent transversely compressed tubercle in the centre. Elytra about two and three-fourths longer than the prothorax, somewhat rapidly narrowing from a little below the base in both sexes; finely punctate-striate, the interstices flat and densely, rugulosely punctate; the apices distinctly dehiscent and strongly acuminate. Beneath closely and finely, the prosternum coarsely and sparsely, punctate; mesosternum with the sides of the cavity considerably raised, subhorizontal behind, almost vertical in front. Length $23\frac{1}{2}$–$25\frac{1}{2}$, breadth $6\frac{1}{4}$–7 millim. (♂ ♀.)

*Hab.* Costa Rica (*Van Patten*).

One pair. Allied to *P. lychniferus*, Germ., and *P. havaniensis*, Cast. (=*causticus*, Germ.), differing from the first-mentioned in the longer and more parallel thorax in the male, and from the latter in the smaller vesicles and the stouter and less abruptly divergent hind angles of the thorax; also from both of these species in the form of the genitalia of the male. In the form of the mesosternum it agrees with *P. lychniferus*.

### 9. **Pyrophorus havaniensis.** (Tab. XX. fig. 26, genitalia, ♂.)

♀. *Pyrophorus havaniensis*, Cast. Hist. Nat. Ins., Col. i. p. 236 (1840)[1]; Cand. Cat. Méthod. Elat. p. 159[2].

*Pyrophorus causticus*, Germ. Zeitschr. für Ent. iii. p. 36 (1841)[3]; Cand. Monogr. Elat. iv. p. 28[4].

*Hab.* Mexico (*Sallé*).—Cuba[1 2 3 4].

In the Sallé collection there is a male example of this species labelled "Mexico," but the locality requires confirmation. This insect agrees perfectly with numerous others from Cuba in the Janson collection, and it has the genitalia of the male similarly formed.

### 10. **Pyrophorus ornamentum.** (Tab. XX. fig. 27, genitalia, ♂.)

*Pyrophorus ornamentum*, Germ. Zeitschr. für Ent. iii. p. 39[1]; Cand. Monogr. Elat. iv. p. 34[2].

♂. *Pyrophorus gemmiferus*, Germ. loc. cit. p. 26[3].

*Hab.* Mexico[1–3], Ciudad in Durango (*Forrer*), Puebla (*Sallé*), Cuernavaca in Morelos (*Sallé*, *Höge*), Yautepec in Morelos, Iguala in Guerrero (*Höge*), Puente de Ixtla and Mescala in Guerrero (*H. H. Smith*).

I have seen thirty-five specimens of this species, which may be known from most of its allies by the prominent, oblong, laterally compressed elevation at the base of the thorax in the middle, and also by the peculiar form of the genitalia of the males. The vesicles on the thorax are large and distinctly raised in most of our specimens; they

are small in the form *gemmiferus*. The antennæ are considerably dilated and extend very little beyond the hind angles of the thorax in the males, shorter in the females; the third joint is not much longer than the second. Some of the specimens in the Janson collection have the thorax opaque. *P. ornamentum* seems to be restricted to the central plateau of Mexico.

### 11. **Pyrophorus occidentalis.** (Tab. XX. figg. 28, ♂; 28 *a*, genitalia, ♂.)

Elongate, rather narrow, the females a little broader, moderately convex, shining, fusco-cinereo-pubescent; pitchy-brown or brown, the prothorax with a large, oval, oblique, slightly raised, yellow vesicle on either side behind, this extending to the lateral margin and almost to the base, the propleuræ with a corresponding yellow patch. Head closely, coarsely punctate, broadly depressed in the middle in front, the eyes large and rather prominent; antennæ stout, serrate, extending very little beyond the hind angles of the prothorax in the male, shorter in the female, the third joint slightly longer than the second. Prothorax as long as broad, rather convex, flattened or depressed on either side of the middle of the disc; the sides moderately rounded, slightly constricted behind and converging in front; the hind angles long and divergent, without distinct carina; the surface densely, moderately coarsely punctate, the punctuation a little more scattered on the middle of the disc, down the centre of which is a smooth line; the base with a prominent laterally compressed tubercle in the centre. Elytra two and one-half times the length of the prothorax, slightly rounded at the sides, narrowing from about the middle; finely or somewhat coarsely punctate-striate, the interstices flat or feebly convex, and densely, rugulosely punctate; the apices conjointly rounded, the sutural angles sharp. Beneath closely and finely, the prosternum coarsely and sparsely, punctate; mesosternum with the sides of the cavity slightly raised behind.

Length 17–18½, breadth 5–5½ millim. (♂ ♀.)

*Hab.* Mexico, Tres Marias Is. (*Forrer*), Acapulco (*Höge*).

Six specimens, three from each locality, varying very little in size. Closely allied to *P. ornamentum*, but differing from it in the less elongate thoracic tubercle (this being abruptly raised in front) and the relatively shorter elytra. The thoracic vesicles are very large and raised. The genitalia of the males are very differently formed from those of any of the allied species. *P. occidentalis* appears to be confined to the Pacific coast of Mexico and the adjacent Tres Marias Islands.

### 12. **Pyrophorus mexicanus.** (Tab. XX. fig. 29, genitalia, ♂.)

Elongate, rather narrow, the females broader, moderately convex, shining, fusco- or fusco-cinereo-pubescent; piceous, pitchy-brown, or brown; the prothorax with a moderately large, ovate, oblique yellow vesicle on either side behind, this being placed near the lateral margin, and in some specimens extending to near the base; the propleuræ with a large yellow patch behind; the legs and antennæ brown or ferruginous. Head closely, coarsely punctate, broadly depressed in the middle in front; the eyes large, rather prominent in the male; antennæ moderately stout, serrate, extending to considerably beyond the hind angles of the prothorax in the male, and scarcely reaching these angles in the female, the third joint a good deal longer than the second. Prothorax as long as or a little longer than broad, feebly convex, and flattened or depressed on either side of the middle of the disc in the male, convex and shorter in the female; the sides converging in front and feebly rounded in the male, strongly rounded in the female; the hind angles long and divergent, carinate; the surface closely, moderately coarsely punctate, the punctuation becoming a little more scattered on the middle of the disc, down the centre of which is a smooth median line, this being impressed towards the base in some specimens; the base with a small laterally compressed tubercle in the centre in the male, and a larger and more prominent longitudinal elevation in the female. Elytra about two and two-thirds longer than the prothorax, gradually narrowing from about

the basal third in both sexes; finely or somewhat coarsely punctate-striate, the interstices flat or feebly convex, and densely, rugulosely punctate; the apices conjointly rounded, with the sutural angles sharp or very feebly mucronate. Beneath closely and finely, the prosternum coarsely and sparsely, punctate; mesosternum with the sides of the cavity feebly raised.

Length 16½–23, breadth 5–6¾ millim. (♂ ♀.)

*Hab.* MEXICO, Vera Cruz, Cosamaloapam, Chiapas (*Sallé*), Temax in North Yucatan (*Gaumer*).

Fifteen examples, eight of which are from Yucatan; some of those in the Sallé and Janson collections were mixed with the series of *P. ornamentum* and *P. stella*. From *P. stella* and its allies it may be recognized by the form of the thoracic tubercle; and from *P. ornamentum* by the laterally compressed thoracic tubercle being considerably smaller, the antennæ more elongate and less dilated, and the genitalia very differently formed, in the males. The females are not easy to separate. *P. mexicanus* also differs from typical *P. ornamentum* in the smaller and less prominent thoracic vesicles. *P. physoderus* is another closely allied form, but that insect has much shorter and stouter antennæ in the males, and a small subconical tubercle at the base of the thorax; the genitalia of the males, however, are very similar.

13. **Pyrophorus physoderus.** (Tab. XX. fig. 30, genitalia, ♂.)

*Pyrophorus physoderus*, Germ. Zeitschr. für Ent. iii. p. 36[1]; Lec. Trans. Am. Phil. Soc. new ser. x. p. 492[2]; Cand. Monogr. Elat. iv. p. 33[3].

*Hab.* NORTH AMERICA, Southern United States[3], Alabama[1], Louisiana[2], Texas.—MEXICO[3], Monclova in Coahuila (*Dr. Palmer*).

Two males from Coahuila and a female labelled "Mexico" in the Janson collection are all I have seen of this species from within our limits. In this insect the antennæ extend very little beyond the hind angles of the thorax in the males, and are still shorter in the females, and the thorax in the females is very convex. The thorax has a small tubercle in the middle at the base. *P. physoderus* is the only species of the genus extending north of our boundary.

14. **Pyrophorus stella.** (Tab. XX. figg. 32, genitalia, ♂; 32 *a*, base of abdomen.)

*Pyrophorus stella*, Cand. Monogr. Elat. iv. p. 32, t. 1. fig. 7[1].

*Pyrophorus caliginosus*, Sturm, Cat. p. 67 (1843)[2].

*Hab.* MEXICO[1 2] (*Sallé, ex coll. Sturm*), Tuxtla (*Sallé*), Misantla, Jalapa (*Höge*), San Francisco in Vera Cruz (*ex Wickham*).

Two species appear to have been confused under this name by Dr. Candèze—one with the antennæ extending a little beyond the hind angles of the thorax in the male, the other with the antennæ considerably more elongate in this sex. The first-mentioned answers to his description; the second is described below under the name *radians*.

The thorax in *P. stella* has a small, prominent, transversely compressed tubercle in the middle at the base. The genitalia of the males differ in form from those of the allied species. *P. stella*, so far as at present known, is confined to the State of Vera Cruz. It has been sent in numbers from Misantla by Herr Höge.

15. **Pyrophorus radians.** (Tab. XX. figg. 31, ♂; 31 *a*, genitalia, ♂; 31 *b*, base of abdomen.)

Elongate, rather narrow, the females broader, moderately convex, shining, fusco-cinereo-pubescent; piceous, pitchy-brown, or rufo-castaneous, the elytra usually castaneous or rufo-castaneous, and paler than the head and prothorax; the prothorax with a moderately large, ovate, oblique yellow vesicle on either side behind, this being placed near the lateral margin and somewhat distant from the base; the propleuræ with a large yellow patch behind; the legs and antennæ brown or ferruginous. Head thickly, coarsely punctate, broadly depressed in the middle in front, the eyes large and rather prominent; antennæ stout and strongly serrate, extending considerably beyond the hind angles of the prothorax in the male, scarcely reaching these angles in the female, the third joint a good deal longer than the second. Prothorax as long as broad, feebly convex, flattened or depressed on either side of the middle of the disc; the sides converging in front and moderately rounded in both sexes, straight or feebly sinuate for some distance before the middle; the hind angles long and rather narrow, strongly divergent, carinate; the surface densely and moderately coarsely punctured at the sides, sparsely so on the disc, down the centre of which is a smooth median line, this being impressed towards the base in some specimens; the base with a small, prominent, transversely compressed tubercle close to the margin in the centre. Elytra about two and two-thirds longer than the prothorax, somewhat rapidly narrowing from a little below the base in the male, less attenuate and slightly more rounded at the sides in the female; finely punctate-striate, the interstices flat and densely, rugulosely punctate; the apices slightly dehiscent, with the sutural angle acute or finely mucronate. Beneath thickly, finely punctate, the prosternum with widely scattered coarse punctures; prosternal process long and horizontal, on the same plane as the prosternum; mesosternum with the sides of the cavity considerably raised behind.

Length 15–27, breadth $4\frac{1}{4}$–$7\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Oaxaca, Teapa (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, Panzos, Chacoj, Panima, Purula, and San Juan in Vera Paz (*Champion*).

Var. *α*. Pitchy-black or piceous; the prothorax with a curved rufous stripe on either side extending from about the middle to the base and surrounding the yellow vesicle; the yellow patch on the propleuræ in two specimens extending forwards to near the apex. (♂ ♀.)

*Hab.* Guatemala, Senahu, San Juan, and Purula in Vera Paz (*Champion*).

Var. *β*. The elytra rather coarsely punctate-striate, with the interstices feebly convex. (♂.)

*Hab.* Nicaragua, Chontales (*Belt*, *E. M. Janson*).

Var. *γ*. The sutural angles of the elytra produced into a long, fine mucro. (♂ ♀.)

*Hab.* Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*); Panama, Bugaba (*Champion*).

The typical form of this species is common in the Polochic Valley in Guatemala, and it extends northwards into Southern Mexico, whence a good series has been received from Mr. H. H. Smith. Of the variety *α* four specimens were found by myself in Vera Paz; the variety *β* is represented by seven males from Nicaragua, some of which are very small; and the variety *γ* by three specimens, one from each locality

quoted. In the form of the tubercle at the base of the thorax, the protuberant mesosternum, &c., *P. radians* agrees with *P. stella*, but it may be separated from that species by the more divergent hind angles of the thorax; the males, moreover, have the antennæ considerably more elongate, the elytra narrowing from a little below the base (instead of from slightly before the middle, as in *P. stella*), and the genitalia very differently formed. In this last-mentioned character the males of each of the varieties agree perfectly with the type. The var. $\gamma$ is connected by intermediate forms, and the var. $\alpha$ inhabits the same region as the type. The luminous portion of the base of the abdomen is limited to a narrow space immediately beneath the intercoxal process. *P. radians* also resembles the South-American *P. pyrophanus*, Illig.; but it has the apices of the elytra less dehiscent, the prosternum more sparsely punctured, and the genitalia of the male very differently formed. A male from Panima is figured.

### 16. **Pyrophorus restinctus.** (Tab. XX. figg. 33, ♂; 33 *a*, genitalia, ♂.)

Moderately elongate, narrow, feebly convex, shining; rufo-testaceous or testaceous, the eyes, the eight outer joints of the antennæ, a broad median vitta on the prothorax, not quite reaching the base or apex and slightly narrowing in front, the scutellum, and the sides of the elytra from before the middle to the apex, broadly, black, the black on the elytra gradually extending inwards and reaching the suture some distance before the apex, the abdomen, and usually the sides of the metasternum also, partly piceous; above and beneath somewhat thickly pubescent, the pubescence on the dark portions of the elytra fuscous, fulvo-cinereous elsewhere. Head thickly, rather coarsely punctate, triangularly depressed in front, the eyes moderately large; antennæ short, not reaching the hind angles of the prothorax, moderately stout, serrate, the third joint slightly longer than the second. Prothorax a little longer than broad, very gradually narrowing from the base forwards, the sides feebly sinuate before and behind the middle and slightly rounded in front, the disc broadly depressed on either side before the middle; the hind angles moderately long, rather stout, divergent, distinctly incurved at the tip, finely carinate; the surface closely and moderately finely punctured, the punctuation becoming coarser at the sides, and usually with indications of a faint smooth median line. Scutellum densely punctured. Elytra about two and three-fourths longer than the prothorax, rapidly narrowing from the basal third; finely punctate-striate, the interstices feebly convex and thickly punctured; the apices narrow, slightly dehiscent, and submucronate. Beneath finely and closely, the prosternum sparsely and coarsely, punctate; mesosternum depressed, a little raised behind, the metasternum slightly produced and convex between the middle coxæ.

*Var.* The pubescence on the upper surface uniformly fulvo-cinereous.

Length 13–14, breadth $3\frac{1}{2}$–4 millim. (♂.)

*Hab.* NICARAGUA, Chontales (*Belt, E. M. Janson*).

Four specimens—three of the typical form, with the pubescence of the upper surface partly abraded, and one of the variety. This insect somewhat resembles *P. formosus*, Germ., from Brazil, but it is less elongate, more closely punctured, and more thickly pubescent, the elytra are acute at the apex and differently coloured, the antennæ are shorter, &c. *P. restinctus* agrees with *Alampes melanoxanthus* and *A. vestitus* in the form of the genitalia of the males, but it differs from them in the declivous mesosternum and the shorter intercoxal process of the metasternum.

## ALAMPES.

Prothorax without luminous vesicles; mesosternum raised behind, the sides of the cavity vertical; metasternum strongly produced in front and convex between the middle coxæ; tarsi simple; the other characters as in *Pyrophorus*.

This genus is proposed to include *Pyrophorus abnormis* and *P. melanoxanthus*, Cand., and the new species described below. These insects have the intercoxal portion of the metasternum considerably produced in front, the mesosternum being thus forced into a vertical position, as in the genera *Spilus* and *Spilomorphus* of the group Dicrepidiini, and *Probothrium* of the group Ludiini. From *Photophorus*, which has the mesosternum still more protuberant behind, it differs in the simple tarsi.

Elytra with a black submarginal stripe extending from the shoulder to the apex; antennæ in the male extending to the hind angles of the prothorax, the basal joint at most partly testaceous; scutellum cinereo-pubescent . . . . . *melanoxanthus.*

Elytra usually with a narrow oblique darker stripe about the middle; antennæ in the male shorter, the three basal joints testaceous; scutellum blackish-brown-pubescent . . . . . *vestitus.*

### 1. **Alampes melanoxanthus.** (Tab. XXI. figg. 1, ♂; 1 *a*, genitalia, ♂.)

*Pyrophorus melanoxanthus*, Cand. Elat. Nouv. i. p. 51 (1864)[1]; Steinh. Col. Hefte, xiv. p. 133[2].

*Hab.* PANAMA, Bugaba (*Champion*).—COLOMBIA[2]; VENEZUELA[1].

One male example from Chiriqui, agreeing with others from Colombia and Venezuela in the Janson collection. This insect is of a rufo-testaceous or testaceous colour, with the base of the head, a large oblong-oval patch on the disc of the thorax, the scutellum, and a submarginal vitta on each elytron extending from the shoulder to the apex, black. The antennæ are short, scarcely extending beyond the hind angles of the thorax in the male, stout and strongly serrate, black, the basal joint partly testaceous; the third joint is slightly longer than the fourth. The scutellum is densely punctured. The legs are testaceous or fusco-testaceous, with the tibiæ more or less piceous. The pubescence is dense.

### 2. **Alampes vestitus.** (Tab. XXI. figg. 3, ♀; 3 *a*, genitalia, ♂).

Elongate, rather narrow, moderately convex, shining; piceous or obscure castaneous, paler beneath, the elytra rufo-castaneous or rufo-testaceous, each with a long oblique stripe extending from some little distance below the shoulder to the suture (the two forming a common **V**-shaped mark); the antennæ piceous, with the three basal joints rufo-testaceous; the legs fusco-testaceous, the tibiæ usually darker; the upper surface densely clothed with rather coarse fulvo-cinereous pubescence, the scutellum blackish-brown-pubescent, the oblique elytral stripe fusco-pubescent, the under surface cinereo-pubescent. Head closely, coarsely punctate, broadly depressed in front, the eyes moderately large; antennæ short, not nearly reaching the hind angles of the prothorax in the male, still shorter in the female, rather stout and strongly serrate, the third joint a little longer than the second. Prothorax longer than broad, very gradually narrowing from the base, the sides slightly rounded in front in the male, a little more rounded in the female, somewhat flattened laterally; the hind angles long, stout, and moderately divergent, distinctly carinate; the surface closely, rather finely punctate, the punctuation becoming coarser and

denser at the sides. Scutellum densely punctured. Elytra about two and four-fifths longer than the prothorax, rapidly narrowing from a little below the base in both sexes; finely and rather deeply punctate-striate, the interstices feebly convex and densely, rugulosely punctate; the apices narrow, slightly dehiscent, and submucronate. Beneath closely and finely, the prosternum coarsely and sparsely, punctured.

*Var.* The oblique stripe on each elytron obliterated.

Length 14–17½, breadth 3¾–4⅔ millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba (*Champion*).

Seven specimens, both forms occurring in each locality. Closely allied to *A. abnormis* (Cand.), from Colombia, the type (♂) of which is before me, but easily separable from it by the blackish-brown pubescence on the scutellum. The variety closely resembles that insect. As in *A. abnormis*, the pubescence is coarse and dense, and almost hides the sculpture. The genitalia of the males are similarly formed.

## ISCHIUS.

*Ischius*, Candèze, Monogr. Elat. i. p. 195 (1857); Elat. Nouv. ii. p. 42; Cat. Méthod. Elat. p. 163.

The two described species of this genus are from Tropical South America—one from Guiana and one from Ecuador; a third from our region is now added. *Ischius* is closely related to *Pyrophorus*, a position subsequently assigned to it by Candèze.

### 1. **Ischius haagi.** (Tab. XXI. fig. 5.)

*Ischius haagi*, Cand. in litt.

Moderately elongate, broad, robust, slightly shining, black; the prothorax flavo-testaceous, with a very large subcruciform black patch, extending to near the lateral margins, base, and apex, and bordered on all sides with reddish-brown, the tubercle at the base, and the tips of the hind angles also in one specimen, reddish-brown; the propleuræ entirely flavo-testaceous; above and beneath thickly and very finely pubescent, the pubescence on the front and base of the head, the sutural and lateral margins of the elytra, and the dark portions of the under surface cinereous, fuscous on the rest of the elytra and on the prothoracic patch, and flavous on the other parts of the prothorax. Head densely, moderately finely punctate, broadly, triangularly depressed in front; antennæ short, not reaching the hind angles of the prothorax, strongly dilated and serrate from the fourth joint, the third joint small, slightly longer than the second. Prothorax a little longer than broad, rounded at the sides, widest at the middle, and distinctly narrowed behind; the hind angles moderately long, stout, divergent, and carinate; the surface densely, finely, uniformly punctate, with an incomplete, smooth, slightly raised median line; the base with a prominent, abruptly raised rounded tubercle in the centre. Elytra two or two and one-fifth times the length of the prothorax, somewhat rounded at the sides, and narrowing from a little below the base; finely punctate-striate, the striæ deeply impressed at the base, the interstices flat or very feebly convex and densely, minutely punctate; the apices conjointly rounded, slightly divaricate at the suture. Beneath closely and finely, the prosternum sparsely and coarsely, punctate.

Length 16–22, breadth 4¾–6¾ millim.

*Hab.* MEXICO (*coll. Janson*); GUATEMALA, Coban (*Champion*).

Two specimens, differing greatly in size, probably male and female. Apart from the very dissimilar coloration, this species may be at once separated from the South-American forms by the small third joint of the antennæ. The specimen in the Janson collection is labelled "*I. haagi*, Cand., type," but I am unable to find any published description of it.

## Group **CORYMBITINI.**

### CORYMBITES.

*Ludius,* Eschscholtz, in Thon's Archiv, ii. 1, p. 34 (1829) (nec Latreille).
*Corymbites,* Latreille, Ann. Soc. Ent. Fr. 1834, p. 150; Leconte, Trans. Am. Phil. Soc. new ser. x. p. 435; Candèze, Monogr. Elat. iv. p. 77.

A single species from Yucatan is somewhat doubtfully referred to this well-known genus, which contains a very large number of representatives in the Palæarctic and Nearctic Regions. It is unnecessary to give here the extensive synonymy, or to enter into the argument as to whether the name *Ludius* or *Corymbites* should be adopted for it *.

#### 1. **Corymbites pilatei.** (Tab. XXI. fig. 2.)

Comparatively short, rather narrow, moderately shining; reddish-brown, rufo-ferruginous beneath, the legs and antennæ testaceous; above and beneath somewhat thickly clothed with very fine, short, fulvous pubescence. Head thickly, finely punctate, triangularly depressed in front; antennæ short, scarcely reaching the hind angles of the prothorax, joints 2 and 3 short, exactly equal in length, the following joints wider and feebly serrate, 4 about twice as long as 3. Prothorax as broad as long, the sides a little rounded and gradually converging anteriorly and feebly sinuate behind; the hind angles long and acute, slightly divergent, sharply carinate, the carina extending for some distance forwards; the surface densely, finely punctate, obsoletely canaliculate along the middle. Elytra two and one-half times the length of the prothorax, and of about the same width, gradually narrowing from the middle, and rounded at the apex; finely punctate-striate, the interstices slightly convex at the sides, flat on the disc, and thickly punctured. Beneath finely and somewhat closely punctate. Posterior coxal plates becoming very narrow outwards, moderately widened inwards.
Length 8, breadth $2\frac{1}{2}$ millim.

*Hab.* Mexico, Yucatan (*coll. Janson*).

One specimen, no doubt a female, in the Janson collection, labelled with the MS. name *Oophorus castaneus*, Pilate. This insect somewhat resembles the North-American *C. divaricatus*, Lec., but differs from it in the short third joint of the antennæ, &c. *C. pilatei* belongs to Sect. IV. of Dr. Candèze's 'Catalogue Méthodique.' The insect is unknown to him. It is not impossible that there is some mistake as to the locality.

## Group **DIMINI.**

### ANTHRACOPTERYX.

*Anthracopteryx,* Horn, Trans. Am. Ent. Soc. xviii. p. 30, t. 1. fig. 7 (max. palpus) (1891).

#### 1. **Anthracopteryx mexicanus.** (Tab. XXI. fig. 4, ♂.)

Elongate, rather broad, flattened above, shining; black, the elytra brownish-black, the metasternum and abdomen pitchy-brown, the antennæ and legs brownish; the upper surface very sparsely clothed with long, fine, semierect, fuscous hairs, the under surface sparsely and finely pubescent. Head rather sparsely,

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* *Cf.* Buysson, Faune Gallo-Rhénane, Élat. p. 73 (1894).

somewhat coarsely punctate, broadly depressed in front; antennæ not reaching the hind angles of the prothorax, feebly serrate, the joints much longer than broad, 3 a little longer than 4 and very much longer than 2. Prothorax considerably longer than broad, widest before the middle, rather sharply margined; the sides moderately rounded, converging from about the middle towards the base and sinuate behind, and also converging in front; the hind angles greatly produced, rather stout, divergent, strongly recurved, sharp at the tip, and not carinate; the surface sparsely, somewhat coarsely punctate, canaliculate behind. Scutellum large, convex, transverse, thickly punctured. Elytra elongate-oboval, about two and one-third times longer than the prothorax, and much narrower than it at the base, a little rounded at the sides, widening to slightly beyond the middle and gradually narrowing thence to the apex; the humeri oblique; finely and rather deeply punctate-striate, the interstices moderately convex and very distinctly punctured. Beneath sparsely punctate. Posterior coxal plates abruptly and very broadly widened in their inner third, very narrow outwards.

Length 10, breadth $3\frac{1}{4}$ millim. (♂.)

*Hab.* Mexico, Oaxaca (*Sallé*).

One specimen only of this remarkable Elaterid has been received. It agrees perfectly in its essential characters with the type of the genus, *A. hiemalis*, Horn, from the mountains of Colorado and Wyoming. The flattened, elongate-oboval elytra, the elongate thorax, with long and recurved hind angles, much larger size, &c., distinguish it from that insect. Following Dr. Candèze's system of classification, the genus *Anthracopteryx* must be referred to the group Dimini.

## Group **HEMICREPIDIINI.**

### HEMICREPIDIUS.

*Pedetes*, Kirby, Faun. Bor.-Amer. iv. p. 145 (1837) (nec Illiger, 1811).

*Asaphes*, Kirby, loc. cit. p. 146 (nec Walker, 1835); Leconte, Trans. Am. Phil. Soc. new ser. x. p. 449; Candèze, Monogr. Elat. iv. p. 207; Cat. Méthod. Elat. p. 181; Horn, Trans. Am. Ent. Soc. viii. p. 69 (1880).

*Hemicrepidius*, Germar, Zeitschr. für Ent. i. p. 212 (1839).

This genus is well represented in our region, as well as in America north of Mexico. The Central-American species, *A. carbonatus* excepted, differ from the typical North-American forms in having the second and third tarsal joints narrower, somewhat compressed, and not lamellate. The fourth tarsal joint in all of them is small and very slender. The two described South-American species probably do not really belong to the same genus: one of these, *H. longipennis* (Cand.), from Colombia, has the third tarsal joint only dilated; the other, *H. amœnus* (Philippi), from Chili, is unknown to me. The numerous species are extremely closely allied, and some of them are very variable in colour, or differ in this respect in the two sexes, this being the case in *H. biformis*, *H. flavipes*, *H. parvulus*, and *H. patruelis*. *H. instabilis* and *H. longicollis* are also very variable in colour, especially in the female sex. Of *H. biformis* we have fortunately received a pair *in copulâ*, thus proving the identification of the sexes.

These insects are chiefly found upon herbage or flowering shrubs, and are sometimes

met with in abundance. The name *Asaphes*, adopted by Leconte and Candèze, is preoccupied in Hymenoptera.

*a*. Second and third tarsal joints rather stout and sublamellate, the fourth small; frontal margin slightly raised above the anterior margin of the head; prothorax with very distinct basal incisures, the hind angles carinate; body entirely black: size large . . . . . *carbonatus*.

*b*. Second and third tarsal joints more slender and somewhat compressed, not lamellate; prothorax (except in *H. pictipes*) without distinct basal incisures: size moderate or small.

*a'*. Frontal margin slightly raised above the anterior margin of the head; hind angles of the prothorax not carinate; body entirely black, sparsely pubescent . . . . . *aterrimus*.

*b'*. Frontal margin confluent with the anterior margin of the head.

*a''*. Hind angles of the prothorax distinctly carinate.

*a'''*. Pubescence sparse and fine; elytra subtruncate at the apex.

*a*⁴. Colour rufo-castaneous, the prothorax with two black vittæ, the hind angles of the latter greatly produced . . . . . *bivittatus*.

*b*⁴. Colour varying from black to reddish-brown; hind angles of the prothorax moderately produced . . . . . *instabilis*.

*b'''*. Pubescence closer and coarser, in some specimens forming light and dark stripes on the prothorax, the hind angles of the latter moderately long; elytra obliquely truncate at the apex, the sutural angles sharp; colour variable, usually reddish-brown in the ♀ . . . . . *longicollis*.

*b''*. Hind angles of the prothorax not or obsoletely carinate; colour in some of the species variable, or differing sexually (*H. patruelis* and *H. parvulus* as regards the prothorax *, and *H. flavipes* and *H. amitinus* as regards the elytra †).

*c'''*. Pubescence sparse and fine.

*c*⁴. Apices of the elytra more or less acuminate.

*a*⁵. Prothorax elongate, the hind angles greatly produced . . . . . *acuminatus*.

*b*⁵. Prothorax shorter, the hind angles moderately produced . . . . *consobrinus*, *germanus*.

*d*⁴. Apices of the elytra more or less truncate or rounded.

*c*⁵. Antennæ moderately long in the ♂.

*a*⁶. Hind angles of the prothorax greatly produced and strongly divergent . . . . . *consanguineus*, *patruelis*, *parvulus*.

*b*⁶. Hind angles of the prothorax moderately produced and less divergent . . . . . *flavipes*, *amitinus*, *candezei*.

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* Prothorax ferruginous, with a black median vitta or oval patch in the ♀.

† Elytra ferruginous or obscure testaceous in the ♀.

$d^5$. Antennæ more slender and more elongate in the male.
$c^6$. Hind angles of the prothorax greatly produced and strongly divergent . . . . . *longicornis.*
$d^6$. Hind angles of the prothorax moderately produced and much less divergent . . . . . *nitidus.*
$d^{III}$. Pubescence closer and coarser.
$e^4$. Prothorax rufous, with a black median vitta, which is sometimes divided or constricted at the centre, and with two large patches of coarse pallid pubescence on either side, leaving a large cruciform space more finely pubescent, the hind angles greatly produced and divergent; elytra black . . . . . *cruciatus.*
$f^4$. Prothorax with a large cruciform black patch (except in *H. biformis*, ♀), for the rest ferruginous or rufous (the sides partly flavous in *H. pictipes*); the pubescence uniform and partaking or not of the ground-colour.
$e^5$. Hind angles of the prothorax greatly produced and strongly divergent, the base with a distinct incisure on either side; elytra very rugose; body similarly coloured in the two sexes . . . . *pictipes.*
$f^5$. Hind angles of the prothorax moderately produced and much less divergent, the base without distinct incisures; elytra smoother; body dissimilarly coloured in the two sexes . . . . . *biformis.*

## 1. Hemicrepidius carbonatus.

*Asaphes carbonatus*, Lec. Proc. Acad. Phil. 1860, p. 320[1]; Cand. Monogr. Elat. iv. p. 214, t. 3. fig. 2[2]; Horn, Trans. Am. Ent. Soc. viii. p. 71[3].
♀. *Asaphes coracinus*, Cand. loc. cit.[4]

*Hab.* North America, Hudson's Bay [2], Oregon [1 4], Nebraska [3], California [3 4].—Mexico, Ciudad in Durango 8100 feet (*Forrer*, *Höge*).

Four specimens. This is the only one of our species with the second and third tarsal joints distinctly lamellate. The insect is very like *H. hirtus* (Cand.), from California, but is clothed with shorter hairs.

## 2. Hemicrepidius aterrimus.

Elongate, very narrow, moderately shining, deep black, sparsely and finely pubescent, the pubescence blackish above and cinereous beneath. Head thickly punctured, transversely depressed in front; the front limited on either side anteriorly by an oblique ridge, which extends downwards and meets the opposite one in the centre slightly above the anterior margin of the head; antennæ moderately elongate, extending fully two joints beyond the hind angles of the prothorax, joint 3 a little longer than 2. Prothorax much longer than broad, slightly narrowing from the middle forwards, and feebly sinuate at the sides behind; the hind angles moderately produced, divergent, not carinate; the surface closely and finely punctate. Scutellum thickly punctured, and with indications of a smooth median line. Elytra two and three-fourths longer than the prothorax, and much wider than it, subparallel to the middle and gradually narrowing beyond, subtruncate at the apex; deeply punctate-striate, the interstices slightly convex and transversely

rugose. Beneath thickly punctured. Tarsi with the second and third joints rather slender and compressed, the fourth small.

Length 8, breadth 2 millim. (♂.)

*Hab.* Mexico, Ciudad in Durango 8100 feet (*Forrer*).

One male example. In this insect the second and third joints of the tarsi are very little stouter than the fourth, and the front in the centre is slightly raised above the anterior margin of the head; the last-mentioned character is common to various North-American members of the genus, and the form of the tarsi is very similar to that of most of the Central-American species. It approaches *Limonius* in some respects, but seems better placed here.

### 3. **Hemicrepidius bivittatus.** (Tab. XXI. fig. 6, ♀.)

Elongate, rather narrow, shining; rufo-castaneous, the head (the sides of the front excepted), antennæ, and scutellum, two vittæ on the prothorax—not reaching the apex, narrowing posteriorly, and confluent in front and behind,—the prosternum (except in front), and the sides of the metasternum, black, the femora infuscate; finely and very sparsely pubescent, the pubescence fusco-cinereous above and cinereous beneath. Head very sparsely punctate, depressed in front; antennæ scarcely reaching the hind angles of the prothorax, joint 3 considerably longer than 2. Prothorax very much longer than broad, gradually narrowing from the middle forwards and sinuate at the sides behind; the hind angles greatly produced, narrow, and strongly divergent, carinate; the surface finely and somewhat sparsely punctate, canaliculate behind. Scutellum rather convex, almost smooth. Elytra two and one-half times the length of the prothorax, and very much wider than it, narrowing from about the basal third, truncate at the apex; punctate-striate, the striæ fine, the interstices rather convex and very sparsely punctured. Beneath very sparsely and finely, the prosternum more coarsely and more closely, punctate.

Length 11, breadth $2\frac{7}{8}$ millim. (♀.)

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*).

One female example. This insect is not closely allied to any of the other species of the genus. The thorax is very elongate and much narrower than the elytra, with greatly produced, narrow, carinate hind angles. The body is very sparsely and finely pubescent, and rufo-castaneous in colour, with the head and two vittæ on the thorax black.

### 4. **Hemicrepidius instabilis.** (Tab. XXI. figg. 7, ♂, var.; 8, var. *leucostigma*, ♀.)

*Asaphes instabilis*, Cand. Monogr. Elat. iv. p. 218[1].

♀. *Asaphes leucostigma*, Cand. loc. cit. p. 220[2].

*Hab.* Mexico [1] [2], Puebla, Tuxtla, Cordova (*Sallé*), Cerro de Plumas, Jalapa (*Höge*), Orizaba (*coll. Janson*), Fortin in Vera Cruz (*H. H. Smith*); Guatemala (*Sallé*), Senahu and Sinanja in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

With the long series of specimens before me from the above localities I am unable to separate *H. leucostigma* from *H. instabilis*, the obliteration of the elytral striæ in

the former proving to be a variable character. The insect is very variable in colour, especially in the female sex, the thorax, and sometimes the head also, being often partly or entirely rufous or rufo-ferruginous. In four of the specimens from Coban, all females, the elytra are reddish-brown. The legs vary in colour from testaceous to almost black. The pubescence on the scutellum is whitish or cinereous, and in fresh specimens the elytra have some whitish hairs at the base in front. The single (female) specimen from Guatemala in the Sallé collection is broader than usual, with the thorax more densely punctured, the elytra more rugose, and the pubescence on the upper surface entirely fulvo-cinereous; it perhaps belongs to another species. The Costa Rican examples are narrower and a little more elongate than the others, but they cannot be separated; in one of the males the thoracic carinæ are almost obsolete. The type of *H. leucostigma* is a female. *H. instabilis* in all its varieties may be known from most of the allied forms by the elongate thorax, with distinctly carinate hind angles, and the sparsely pubescent surface. We figure a variety of the male from Cerro de Plumas, and a female of the variety *leucostigma* from Sinanja.

### 5. **Hemicrepidius longicollis.** (Tab. XXI. fig. 9, ♂.)

♂. *Asaphes longicollis,* Cand. Monogr. Elat. iv. p. 218[1].

♂. *Asaphes deceptor,* Cand. loc. cit. p. 219[2].

♀. *Asaphes soricinus,* Deyr. in litt.

*Hab.* Mexico[1 2], Etla, Yolos, Tepansacualco, Parada, Juquila, Orizaba (*Sallé*), Cordova (*Sallé, Höge*), Jalapa (*Höge, M. Trujillo*), Chilpancingo (*H. H. Smith*).

Not uncommon in Mexico. The males of this species are usually black, with the hind angles of the thorax more or less rufo-ferruginous, and the females reddish-brown or with the elytra of that colour. The pubescence is rather coarse and close. In some specimens (as in the type of *H. longicollis*) the sides of the thorax and a line down the middle, and the scutellum, are cinereo-pubescent, and there is sometimes an oblique cinereo-pubescent stripe on each elytron extending from the shoulder downwards, the rest of the pubescence being fuscous or fusco-cinereous; in others (*H. deceptor* *) the pubescence is uniformly cinereous or yellowish-cinereous. The antennæ and legs vary in colour. The antennæ extend to a little beyond the hind angles of the thorax in the males, slightly shorter in the females. The thorax is much longer than broad, closely punctured, with the hind angles finely carinate. The elytra are deeply punctate-striate, with the interstices rather convex and rugosely punctured; the apices are obliquely truncate, with the sutural angles mucronate. *H. longicollis* may be known from *H. instabilis* by the closer and coarser pubescence, the shorter and finer carina of the hind angles of the thorax, and the more obliquely truncate apices of the elytra. In some of the largest females the punctuation of the thorax is sparser and coarser,

* Dr. Candèze (*op. cit.*) compares this insect with *H. flavipes,* evidently in mistake for *H. longicollis.*

and the elytral interstices more convex. The females are separated in the Sallé collection under the name of *Asaphes soricinus*.

We figure a typical male from Cordova.

### 6. **Hemicrepidius acuminatus.**

Elongate, narrow, shining; black or pitchy-black, the prothorax with the hind angles usually rufo-ferruginous; the elytra sometimes rufo-ferruginous at the base, in one specimen castaneous; the antennæ black, the legs piceous or brown; the under surface black or piceous, the propleuræ and abdomen sometimes partly ferruginous; above and beneath sparsely and finely pubescent, the pubescence fuscous or fusco-cinereous, cinereous on the scutellum and under surface. Head thickly, finely punctate, flattened in front; antennæ about reaching the hind angles of the prothorax in the female, longer in the male, joint 3 a little longer than 2. Prothorax much longer than broad, very gradually narrowing from the middle forwards and slightly sinuate at the sides behind; the hind angles elongate and strongly divergent, not carinate; the surface somewhat sparsely, finely punctate and usually canaliculate behind. Scutellum feebly convex in front. Elytra about two and one-half times longer than the prothorax, and wider than it, narrowing from the middle, the apices acuminate and dehiscent; rather coarsely punctate-striate, the interstices more or less convex and sparsely punctured. Beneath sparsely punctate.

Length $7\frac{1}{2}$–$9\frac{1}{3}$, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Playa Vicente and Oaxaca (*Höge*).

Five specimens. This species may be chiefly distinguished amongst its allies by the elongate, sparsely punctured thorax, the hind angles of which are long and non-carinate, the sparse pubescence, and the acuminate and dehiscent apices of the elytra. The pubescence on the scutellum is whitish. In one of the two specimens from Playa Vicente the elytra are castaneous. In the elongate thorax and sparse pubescence the present species approaches *H. patruelis*, *H. instabilis*, &c.

### 7. **Hemicrepidius consobrinus.** (Tab. XXI. fig. 10, ♀.)

Moderately elongate, narrow, shining; black or piceous, the hind angles of the prothorax, the extreme base of the elytra, and the margins of the propleuræ rufo-ferruginous, the front of the head, the anterior angles and lateral margins of the prothorax, the elytral epipleuræ, the basal joint of the antennæ, and the greater part of the under surface also rufo-ferruginous in the female, the elytra testaceous-brown in this sex in one specimen; the legs pitchy-brown in the male, testaceous in the female; above and beneath sparsely and finely pubescent, the pubescence on the upper surface yellowish- or fusco-cinereous, cinereous beneath. Head thickly punctured, depressed in front; antennæ about reaching the hind angles of the prothorax in the male, shorter in the female, joint 3 slightly longer than 2. Prothorax very little longer than broad, the sides sinuate behind and gradually converging anteriorly; the hind angles acute and feebly divergent, not carinate; the surface thickly, finely punctate, obsoletely canaliculate behind. Scutellum convex in front, thickly punctured, and with indications of a smooth median line. Elytra two and two-thirds longer than the prothorax, narrowing from a little below the base, slightly dehiscent and subacuminate at the apex; deeply punctate-striate, the interstices rather convex and sparsely, somewhat rugosely punctate. Beneath sparsely punctured.

Length 6–$6\frac{4}{5}$, breadth $1\frac{1}{2}$–$1\frac{7}{8}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Senahu in Vera Paz (*Champion*).

Three examples. In the slightly dehiscent and acuminate apices of the elytra this small species approaches *H. acuminatus*, from which it differs in having the thorax

much less elongate, with shorter and less divergent hind angles. The thorax is very little longer than broad. From *H. candezei* it may be known by the less parallel thorax and the more acuminate apices of the elytra.

## 8. Hemicrepidius germanus.

Elongate, rather broad, shining; black, with the tips of the hind angles of the prothorax and the sides of the abdomen ferruginous, or with the anterior, basal, and apical borders of the prothorax, the propleuræ, and abdomen ferruginous and the elytra reddish-brown; the antennæ piceous or black, the legs obscure testaceous; above and beneath sparsely clothed with rather long yellowish-cinereous hairs. Head unequally, somewhat sparsely punctate, flattened in front; antennæ about reaching the hind angles of the prothorax, joint 3 a little longer than 2. Prothorax slightly longer than wide, the sides gradually converging from the middle forwards and feebly sinuate behind; the hind angles moderately produced, slightly divergent, and not carinate; the surface sparsely, finely punctate, canaliculate behind. Scutellum convex in front, closely punctured. Elytra about two and two-thirds longer than the prothorax, and slightly wider than it, narrowing from the middle, the apices rather sharp; deeply punctate-striate, the interstices convex and sparsely punctured. Beneath sparsely punctate.

Length $8\frac{3}{4}$–10, breadth $2\frac{1}{2}$–$2\frac{7}{8}$ millim. (♀.)

*Hab.* Guatemala, Capetillo (*Champion*), Chimaltenango (*Conradt*).

Two females, differing greatly in colour. These specimens cannot be satisfactorily placed with any of the other species here enumerated. The thorax is very little longer than broad, sparsely punctured, and with feebly divergent non-carinate hind angles. *H. germanus* is perhaps nearest allied to *H. consanguineus*, but it is very much larger and more elongate. The punctuation of the thorax is unusually sparse. No male *Hemicrepidius* has been received from the central plateau or the Pacific slope of Guatemala where these females were found.

## 9. Hemicrepidius consanguineus.

Moderately elongate, narrow, shining; black or pitchy-black, the hind angles of the prothorax ferruginous, the legs and antennæ pitchy-black or brown; above and beneath sparsely and finely pubescent, the pubescence fuscous on the elytra, yellowish-cinereous on the head and prothorax, and cinereous beneath. Head thickly punctured, flattened in front; antennæ rather stout, extending to about two joints beyond the hind angles of the prothorax, joint 3 slightly longer than 2. Prothorax a little longer than broad, subparallel, the sides rounded in front and feebly sinuate behind; the hind angles long and narrow, strongly divergent, not carinate; the surface thickly, moderately finely punctate. Scutellum rather convex in front, thickly punctured. Elytra nearly three times the length of the prothorax, and wider than it, narrowing from about the basal third, subtruncate at the apex, the sutural angles submucronate; deeply punctate-striate, the interstices convex and rugosely punctured. Beneath sparsely punctate.

Length $6\frac{1}{2}$–$7\frac{1}{5}$, breadth 2 millim. (♂.)

*Hab.* Costa Rica, Volcan de Irazu 6000–7000 feet (*Rogers*).

*Var.*? The prothorax entirely black, the hind angles obsoletely carinate; the elytra testaceous-brown, the interstices sparsely punctate.

*Hab.* Panama, Volcan de Chiriqui 4000 feet (*Champion*).

Three male examples—two from Costa Rica and one from Chiriqui. Very near

*H. longicornis*, and perhaps an extreme form of that species, but differing from it in its less elongate shape, the shorter and stouter antennæ in the male, and the less parallel thorax in this sex. From *H. candezei* it may be separated by the long and strongly divergent hind angles of the thorax; from *H. parvulus* by the much larger size and the more parallel thorax; and from *H. amitinus* by the less elongate thorax, with more produced hind angles.

### 10. **Hemicrepidius patruelis.** (Tab. XXI. fig. 11, ♀.)

Elongate, narrow, slightly shining; black or pitchy-black, the hind angles of the prothorax in the male obscure ferruginous; the prothorax in the female rufo-testaceous, with an oval black patch on the disc, extending to the base but not to the apex and with a reddish line or mark in the centre; the antennæ black, the legs fusco-testaceous or piceous; the under surface piceous, the epipleuræ, the propleuræ behind in the male, and the abdomen in part obscure ferruginous, the prosternum in front and the propleuræ entirely rufo-testaceous in the female; above and beneath rather sparsely pubescent, the pubescence fuscous or fusco-cinereous, paler on the head and under surface and on the lateral portions of the prothorax. Head thickly, finely punctate, depressed in the middle between the eyes; antennæ about reaching the hind angles of the prothorax in the female, longer in the male, joint 3 a little longer than 2. Prothorax much longer than broad, very gradually narrowing from the middle forwards and slightly sinuate at the sides behind; the hind angles long and divergent, not or very obsoletely (♀) carinate; the surface closely and finely punctate and also canaliculate. Scutellum rather convex, and with indications of a smooth raised median line. Elytra wider than the prothorax, and about three times its length, gradually narrowing from the middle, the apices truncate, the sutural angles finely mucronate; deeply punctate-striate, the interstices convex and strongly transversely rugose, granulate on the basal declivity. Beneath sparsely, finely punctate.

Length $8\frac{1}{4}$–$9\frac{1}{2}$, breadth $2\frac{1}{5}$–$2\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* MEXICO, Oaxaca (*Höge*).

Three examples. Allied to *H. longicollis*, but differing from it in the very rugose elytral interstices, the relatively narrower thorax, the hind angles of which are not or very obsoletely carinate, the finer pubescence, &c. The sexes differ in the colour of the thorax.

### 11. **Hemicrepidius parvulus.** (Tab. XXI. fig. 12, ♀.)

Elongate, narrow, shining; black, the prothorax with the hind angles ferruginous (♂)—ferruginous, with a broad, posteriorly narrowed, black median vitta (♀), the propleuræ and the underside of the basal joint of the antennæ also ferruginous in the female; the legs testaceous, the femora and tarsi sometimes infuscate; above and beneath sparsely and finely pubescent, the pubescence on the upper surface fusco-cinereous, that on the lower surface cinereous. Head thickly punctured, flattened in front; antennæ extending considerably beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 short, equal in length. Prothorax a little longer than wide, slightly narrowed in front, the sides feebly rounded in the female, subparallel in the male, and sinuate behind; the hind angles greatly produced, strongly divergent, and acute, not carinate; the surface rather sparsely, finely punctate. Scutellum convex in front, thickly punctured, with indications of a smooth median line. Elytra about two and three-fourths longer than the prothorax, and wider than it, narrowing from the basal third, the apices subtruncate; punctate-striate, the interstices rather convex and rugosely punctured. Beneath sparsely punctate.

Length 5–$5\frac{1}{2}$, breadth $1\frac{1}{3}$–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Purula in Vera Paz (*Champion*).

Three examples. This small species is closely allied to *H. flavipes*, from which it differs in the greatly produced and strongly divergent hind angles of the thorax and the shorter third joint of the antennæ. As in *H. patruelis*, &c., the thorax is differently coloured in the two sexes.

### 12. **Hemicrepidius flavipes.** (Tab. XXI. fig. 13, ♀.)

♂. *Asaphes flavipes*, Cand. Monogr. Elat. iv. p. 219[1].

*Hab.* Mexico [1], Zacualtipan in Hidalgo (*Höge*).

This small species has been found in plenty at Zacualtipan. The type is a male, with the legs entirely flavous. The female, of which we have received three specimens, has the anterior and lateral margins and the hind angles, or the anterior and hind angles, of the thorax testaceous, and the elytra testaceous or fusco-testaceous, with the suture darker. The male is black or brownish black. The legs vary in colour from flavous or testaceous to piceous, being usually piceous in the male. The thorax has the sides less parallel and more constricted behind in the female, the hind angles appearing more divergent; it is much more coarsely punctured in some specimens than in others. The third joint of the antennæ is a little longer than the second. The scutellum is thickly punctured, convex in front, with indications of a smooth median line. The elytra are rounded or feebly subtruncate at the apex. Our specimens vary from 5–6 millim. in length.

### 13. **Hemicrepidius amitinus.**

Elongate, rather narrow (♂), moderately broad (♀), shining; black (♂),—entirely ferruginous, or ferrugineo-testaceous, with a transverse patch on the head behind, and the prothorax, except along the basal, lateral, and apical margins, piceous (♀); the legs piceous in the male, testaceous in the female; above and beneath sparsely and finely pubescent, the pubescence fusco-cinereous above in the male, paler in the female. Head thickly punctured, flattened in front; antennæ extending to a little beyond the hind angles of the prothorax in the male, slightly shorter in the female, joint 3 distinctly longer than 2. Prothorax longer than broad, a little narrowed in front, the sides feebly rounded in the female, straighter in the male, and slightly sinuate behind; the hind angles feebly divergent, not carinate; the surface thickly, finely punctate, canaliculate behind. Scutellum rather convex in front, closely punctured, with indications of a smooth raised median line. Elytra two and three-fourths longer than the prothorax, and wider than it, narrowing from the basal third, subtruncate at the apex, the sutural angles feebly mucronate; punctate-striate, the interstices flat or feebly convex and rugosely punctured. Beneath sparsely punctate.

Length 7–8¾, breadth 2–2½ millim. (♂ ♀.)

*Hab.* Mexico, Zacualtipan and Real del Monte in Hidalgo (*Höge*).

Four males and two females. Closely allied to *H. flavipes*, of which it is perhaps an extreme form, but much larger, more robust, and more elongate, the females differently coloured (the head being black and the suture infuscate in the corresponding sex of *H. flavipes*). From similarly-coloured specimens of *H. instabilis* the present species may be known by the less elongate thorax, the hind angles of which are not carinate, the rather more convex scutellum, &c.

### 14. **Hemicrepidius candezei.** (Tab. XXI. fig. 14, ♂.)

Moderately elongate, narrow, shining; black, the anterior and hind angles of the prothorax, and sometimes the lateral margins also, rufo-ferruginous, the elytra blackish-brown in one specimen; the legs brownish or piceous; beneath, the epipleuræ included, pitchy-brown, the borders of the propleuræ ferruginous; the legs brownish or piceous; above and beneath sparsely and finely pubescent, the pubescence on the head, the sides of the prothorax, and under surface cinereous, for the rest fuscous. Head thickly punctured, flattened in front; antennæ extending to a little beyond the hind angles of the prothorax, the third joint slightly longer than the second. Prothorax longer than broad, subparallel, the sides feebly sinuate before and behind the middle; the hind angles slightly divergent and moderately produced, not carinate; the surface finely, rather sparsely punctate. Scutellum convex in front, sparsely punctured. Elytra about two and two-thirds longer than the prothorax, narrowing from the middle, somewhat obliquely truncate at the apex, the sutural angles obsoletely mucronate; deeply punctate-striate, the interstices convex and rugosely punctured. Beneath sparsely punctate.

Length $6\frac{1}{2}$–$7\frac{1}{2}$, breadth $1\frac{3}{4}$–2 millim. (♂.)

*Hab.* Mexico (*coll. Janson, ex Candèze*), Misantla in Vera Cruz (*Godman*).

Three specimens, apparently all males. The example in the Janson collection is labelled *Asaphes deceptor*, Cand., which is here treated as a variety of *H. longicollis*, but differs from that insect in its sparser and finer pubescence, the less elongate, subparallel thorax, the hind angles of which are not carinate, the smoother scutellum, &c. *H. candezei* is nearest allied to *H. amitinus*, but may be separated from the males of that species by the more parallel, differently coloured thorax, the anterior angles of the latter being more prominent. The specimen from the Janson collection is figured.

### 15. **Hemicrepidius longicornis.** (Tab. XXI. fig. 15, ♂, var.)

Elongate, narrow, shining; black or pitchy-black, the prothorax and propleuræ ferruginous in one specimen (♂); the antennæ black, two basal joints paler in one specimen; the legs varying in colour from testaceous to pitchy-black; above and beneath sparsely pubescent, the pubescence long and yellowish- or fulvo-cinereous in colour, the elytra sometimes with blackish hairs intermixed. Head somewhat thickly, irregularly punctate, flattened in front; antennæ rather slender, elongate in the male, extending to about three joints beyond the hind angles of the prothorax, shorter in the female, joint 3 a little longer than 2. Prothorax longer than broad, subparallel, the sides slightly sinuate before and behind the middle, and rounded in front; the hind angles long and acute, strongly divergent, not carinate; the surface somewhat thickly, finely punctate. Scutellum rather convex in front, densely punctured. Elytra three times the length of the prothorax, and much wider than it, gradually narrowing from about the middle, rounded at the apex; punctate-striate, the interstices feebly convex and rather sparsely punctured. Beneath sparsely punctate.

Length $7\frac{1}{2}$–$8\frac{1}{2}$, breadth 2–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*); Panama, Volcan de Chiriqui 8000 feet (*Champion*).

A pair from Chiriqui and a male from Costa Rica, the latter having the thorax ferruginous in colour. This insect differs from most of its allies by the elongate antennæ in the male. From *H. instabilis* it may be known by its less elongate thorax, with the hind angles more abruptly divergent, as well as by the form of the antennæ. The antennæ are very elongate in the male from Chiriqui, slightly shorter in the other specimen of the same sex from Costa Rica.

### 16. **Hemicrepidius nitidus.**

Elongate, narrow, rather depressed, shining; black, with a slight metallic lustre, the antennæ and legs pitchy-brown; above and beneath sparsely clothed with long, fine hairs, which are yellowish-cinereous on the upper and cinereous on the lower surface. Head sparsely punctured, flattened in front; antennæ rather slender, elongate, extending to fully two joints beyond the hind angles of the prothorax, joint 3 a little longer than 2. Prothorax longer than broad, subparallel, slightly narrowed in front, feebly sinuate at the sides behind; the hind angles acute and moderately divergent, not carinate; the surface rather sparsely and somewhat finely punctate. Scutellum flattened, closely punctured. Elytra nearly three times the length of the prothorax, and wider than it, narrowing from the middle, subtruncate at the apex; punctate-striate, the striæ fine, the interstices feebly convex and sparsely punctured. Beneath very sparsely punctate, the prosternum with widely scattered punctures.

Length $8\frac{1}{3}$, breadth $2\frac{1}{5}$ millim. (♂.)

*Hab.* Mexico, Cordova (*Sallé*).

One male example. Allied to *H. amitinus*, but more depressed and more shining; the punctuation of the thorax coarser, and that of the prosternum sparser; the antennæ more elongate in the male. From *H. longicornis* it may be known by the much less produced hind angles of the thorax.

### 17. **Hemicrepidius cruciatus.** (Tab. XXI. fig. 16, ♂.)

Elongate, narrow, slightly shining; black, the prothorax rufous, with a median vitta of variable extent—sometimes constricted or interrupted in the middle, or reduced to a small mark at the base and apex, and sometimes broad throughout,—and the hind angles also in some specimens, black; the margins of the propleuræ, metasternum, and abdomen usually ferruginous; the legs piceous or black, the antennæ entirely black; the prothorax with a broad patch on either side in front and behind thickly clothed with long, coarse, decumbent, pale yellowish hairs, leaving a large cruciform mark extending to the base, apex, and lateral margins, this portion of the surface being clothed with finer, fuscous hairs; the scutellum and elytra fusco-pubescent, the elytra in some specimens (♀) with a broad oblique space down the disc of each yellowish-cinereous-pubescent; the head and under surface sparsely clothed with yellowish-cinereous pubescence. Head triangularly depressed in front, sparsely punctured anteriorly, closely so on the vertex; antennæ about reaching the hind angles of the prothorax in the female, considerably longer in the male, joint 3 slightly longer than 2. Prothorax longer than broad in both sexes, feebly rounded at the sides, the latter slightly converging in front, straight or feebly sinuous before the middle, and sinuate behind; the hind angles long and strongly divergent, acute, not carinate; the surface densely and finely punctate throughout. Scutellum feebly convex in front. Elytra about two and three-fourths longer than the prothorax, and distinctly wider than it, somewhat rounded at the sides, narrowing from the basal third, the apices subtruncate; deeply punctate-striate, the interstices rather convex and transversely rugose, granulate on the basal declivity. Beneath sparsely, finely punctate.

Length $6\frac{1}{2}$–$7\frac{3}{4}$, breadth $1\frac{4}{5}$–$2\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, Purula in Vera Paz 4000 feet (*Champion*).

This insect occurred not uncommonly in a forest-clearing near Purula; the specimens were found sunning themselves upon leaves. *H. cruciatus* is allied to the Mexican *H. pictipes* (Chevr.), from which it differs in its narrower and more elongate shape and less opaque surface; the head is depressed in front and more sparsely punctured; the thorax has a large patch of coarse pallid pubescence on either side in front and behind, the cruciform space thus left appearing at first sight almost bare, it being clothed with finer and darker hairs. The thorax is rufous; the black median vitta is variable in

extent, being sometimes reduced to a small spot at the base and apex, but it does not extend outwards at the middle (as in *H. pictipes*), so as to form a cruciform black mark.

### 18. **Hemicrepidius pictipes.** (Tab. XXI. fig. 17, ♀.)

*Agrypnus pictipes*, Chevr. Mag. Zool. 1843, tt. 107–113, p. 7 [1].
*Adelocera pictipes*, Cand. Monogr. Elat. i. p. 74 [2].
*Asaphes pictipes*, Cand. op. cit. iv. p. 217, t. 3. fig. 3 [3].

*Hab.* Mexico [3], Jalapa [1 2], Orizaba (*Sallé*), Cordova (*Sallé*, *Höge*).

Apparently a common insect at Cordova, whence we have received a large number of examples. This species may be readily known from its allies by its subopaque surface, transversely rugose elytra, and densely punctured thorax; the latter with a broad cruciform patch—often interrupted on either side, so as to leave a median vitta and a marginal spot—black, bordered with rufous, the sides in front and behind being yellow. The thoracic pubescence partakes of the ground-colour; the hind angles are not or obsoletely carinate; the base has a distinct deep incisure on either side.

### 19. **Hemicrepidius biformis.** (Tab. XXI. figg. 19, ♂; 20, ♀.)

Moderately elongate, narrow (♂), the females broader, shining; black or piceous (♂), reddish-brown, castaneous, or black (♀), the prothorax rufous or ferruginous, with a cruciform black patch of variable extent on the disc—in some specimens (♂) very broad, extending to the base and apex, and almost to the lateral margins, and in others (♀) reduced to an anteriorly dilated median vitta, two transverse marks, or a transverse mark before the middle; the antennæ black, the basal joint usually ferruginous in the females; the legs varying in colour from testaceous to piceous; the under surface varying in colour from rufo-ferruginous to piceous; above somewhat thickly clothed with rather coarse yellowish-cinereous pubescence, the pubescence usually fuscous on the elytra in the males and on the prothoracic patch in both sexes, the elytra in some males with an oblique stripe of yellowish-cinereous hairs on the disc, the under surface sparsely cinereo-pubescent. Head depressed in front, sparsely punctured anteriorly, closely so on the vertex; antennæ extending slightly beyond the hind angles of the prothorax in the male, a little shorter in the female, joint 3 slightly longer than 2. Prothorax a little longer than broad, the sides slightly converging in front, and distinctly sinuate before the middle as well as before the base; the hind angles feebly divergent, not or obsoletely carinate; the surface densely, finely punctate. Scutellum convex in front, sparsely punctured. Elytra two and one-half times the length of the prothorax, narrowing from about the basal third, the apices subtruncate; deeply punctate-striate, the interstices rather convex, somewhat coarsely punctured, and transversely rugulose, granulate on the basal declivity. Beneath sparsely, finely punctate.

Length $5\frac{1}{2}$–$8\frac{1}{3}$, breadth $1\frac{3}{5}$–$2\frac{1}{5}$ millim. (♂ ♀.)

*Hab.* Mexico, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Chiacam, Sabo, and Sinanja in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*).

Found in abundance at Chiacam, upon herbage, the sexes in about equal numbers; one or two specimens only at each of the other localities. From Herr Conradt we have received a pair "*in copulâ*" from Coban. The sexes differ greatly in colour and size, the males being much smaller than the females, and the latter usually having the head, elytra, and basal joint of the antennæ reddish-brown, and the discoidal mark on the thorax very much reduced in size. The insect is closely allied to *H. cruciatus*, but

it is smaller and less elongate, and also differs from it in the more shining and less rugose elytral interstices, the shorter antennæ in the male, and the less produced hind angles of the thorax, the latter with the black mark on the disc dilated laterally in the males, so as to form a large cruciform patch (in *H. cruciatus* the black mark is usually interrupted or constricted about the middle). In a few of the females the elytra are black or piceous; the hind angles of the thorax are sometimes obsoletely carinate at the tip in this sex. From *H. pictipes* the present species may be known by its narrower shape and more shining surface, the less densely punctured head and thorax, the latter not incised on either side at the base, the much less rugose elytral interstices, &c. The single specimen in the Sallé collection was mixed with the series of *H. longicollis*, from which it differs in its smaller size, the less elongate thorax, the hind angles of which are not or very indistinctly carinate and the disc is more or less distinctly marked with a black cruciform patch (of which there is no trace in *H. longicollis*), and the rather more abruptly truncate apices of the elytra.

## Group **ALLOTRIINI.**

## ALLOTRIOPSIS.

Head very deeply excavate anteriorly; the front subtriangular, limited on either side by a sharp, oblique carina, the two being coalescent in the centre, and there joining an oblique ridge extending upwards from beneath the points of insertion of the antennæ, the latter thus appearing to be inserted in deep cavities; eyes very large; mandibles bifid; antennæ (♂) exceedingly elongate, two-thirds the length of body, joint 3 very short, shorter than 2, the two together not nearly so long as 4, 4–11 very elongate, flattened, moderately widened, and serrate; prothorax transverse, bisinuate at the apex and trisinuate at the base, sharply margined, with long, narrow, acute hind angles; scutellum oval, flattened, rather large; elytra very elongate, confusedly punctured, without trace of striæ; prosternum moderately broad, with a broad, subtruncate, prominent chin-piece, the lateral sutures single and sinuous, the process declivous behind the coxæ, long, and compressed; mesosternum depressed, the borders of the cavity not raised; metasternum elongate; posterior coxal plates rapidly narrowing from opposite the point of insertion of the femora, becoming very narrow outwards; legs elongate, rather slender; tarsi somewhat compressed, joints 2–4 slightly emarginate on the upperside at the apex, lobed beneath, the lobes becoming longer and broader outwards, the lobe on the very short, penultimate joint fully two-thirds the length of the apical joint and broad at the tip; basal joint of the hind tarsi about as long as the following three joints united; claws simple.

The remarkable Elaterid from which the above characters are taken differs from all the other genera of the group Allotriini, one only of which is American, in the triangular, deeply excavate front. The tarsal joints 2–4 have each a long lobe beneath, as in the eastern genus *Allotrius*. The form of the head somewhat resembles that of the genus *Dicrepidius* of the group Dicrepidiini, from which the present insect differs in the deeply excavate triangular front, the narrow coxal plates, the strongly lobed penultimate tarsal joint (this joint being simple in the Dicrepidiini), &c. The form of the tarsi, &c. distinguishes it from the American genus *Anaissus*, Cand., of the group Crepidomeni.

### 1. **Allotriopsis nasalis.** (Tab. XXI. figg. 18, ♂; 18 *a*, antenna.)

Very elongate, somewhat flattened above, moderately shining; fusco-castaneous; above somewhat thickly clothed with moderately coarse, decumbent, yellowish-cinereous hairs, those on the prothorax long and appearing to be transversely or obliquely combed inwards, the hairs on the elytra unequally distributed, here and there forming denser patches, the under surface very sparsely clothed with long hairs. Head closely, coarsely punctate. Prothorax much broader than long, widest a little before the middle, broadly depressed and explanate at the sides, and with a large shallow fovea on either side of the disc about the middle and another towards the base; the sides rounded from the middle forwards and converging and sinuate behind; the hind angles long, narrow, and divergent, finely carinate. Elytra rather more than four times the length of the prothorax, and a little wider than it, parallel to near the middle and narrowing thence to the apex, the apices dehiscent and separately rounded; the surface impressed with fine and rather coarse punctures intermixed, the punctuation towards the sides here and there becoming more crowded, and with traces of very shallow longitudinal grooves, which become more distinct laterally and at the apex. Beneath very sparsely punctured.

Length 14, breadth $3\frac{1}{2}$ millim. (♂.)

*Hab.* GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

One example, found in a forest-clearing, in the vicinity of the coffee-plantation of Las Nubes, on the Pacific slope. The insect is unknown to Dr. Candèze.

## Group **HYPODESINI.**

## HYPODESIS.

*Hypodesis,* Latreille, Ann. Soc. Ent. Fr. iii. p. 156 (1834); Lacordaire, Gen. Col. iv. p. 202 (1857); Candèze, Monogr. Elat. iv. p. 242.

One of the most characteristic genera of Elateridæ in Central America; nine species are known to me *, two only of which extend into the northern part of South America. In some of them, *H. aureipilis* and *H. auricoma*, the meso- and metasternum are almost connate, the transverse suture being distinct at the sides only. Most of the species have a more or less distinct matted tuft or pencil of hairs on either side of each of the first four ventral segments behind, these being partly visible from above, as in various Buprestidæ; in *H. viridipennis* there is a large impunctate glabrous space in front of each of these tufts.

*a*. Ventral segments with, at most, a small glabrous spot on either side; elytra not metallic (except in *H. auricoma* and its var. *α*).

*a'*. Hind angles of the prothorax sharply carinate; elytra without definite markings.

*a''*. Elytra conspicuously pubescent.

*a'''*. Prothorax without a distinct projecting tuft of hairs in the centre at the base.

*a*⁴. Elytra finely punctate-striate.

*a*⁵. Prothorax moderately coarsely punctate, distinctly or obsoletely canaliculate.

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* An additional undescribed form from Chiguinda, Ecuador, is contained in the Janson collection.

$a^6$. Pubescence of the upper surface coppery-orange; prothorax and elytra densely punctured . . . . . *sericea.*

$b^6$. Pubescence of the upper surface golden; prothorax and elytra more sparsely punctured.

$a^7$. Elytral interstices uniformly punctured . . . . . *chrysomalla.*

$b^7$. Second and fourth elytral interstices more densely punctured than the others; prothorax shorter, and more coarsely punctured on the disc . . . . . *aureipilis.*

$b^5$. Prothorax coarsely, rugosely punctate, obsoletely canaliculate . *cribricollis.*

$b^4$. Elytra coarsely punctate-striate, the striæ shallow (obsolete in some specimens); prothorax canaliculate . . . . . *punctata.*

$b'''$. Prothorax with a distinct projecting tuft of hairs in the centre at the base, canaliculate, and sparsely punctate . . . . . *penicillata.*

$b''$. Elytra almost glabrous, submetallic (except in var. $\beta$); prothorax with a projecting tuft of hairs in the centre at the base, canaliculate . . *auricoma.*

$b'$. Hind angles of the prothorax without distinct carina; elytra vittate . . *vittata.*

*b*. Ventral segments with a large smooth glabrous space on either side; prothorax without distinct median groove, the hind angles carinate; elytra metallic . . . . . *viridipennis.*

## 1. **Hypodesis sericea.** (Tab. XXI. fig. 21, ♂.)

*Hypodesis sericea*, Latr. Ann. Soc. Ent. Fr. iii. p. 156 (sine descr.) (1834) [1]; Lacord. Gen. Col. iv. p. 202 [2]; Cand. Monogr. Elat. iv. p. 243, t. 3. figg. 10, 10 *a*, *b* [3].

*Dicrepidius lanuginosus*, Dej. Cat. 3rd edit. p. 97 [4].

*Hab.* Mexico [1–4], Toxpam, Cordova (*Sallé*), Jalapa (*Höge*).

In this insect, of which upwards of a dozen examples are before me, the pubescence of the upper surface is of a uniform coppery-orange colour and that of the lower surface cinereous, the hairs on each of the first four abdominal segments (as in *H. chrysomalla*, *H. cribricollis*, &c.) forming a matted tuft at the sides behind, this being partly visible from above. The abdominal segments have each a small glabrous spot at the sides.

## 2. **Hypodesis chrysomalla.**

*Hypodesis sericea*, Germ. Zeitschr. für Ent. i. p. 222 [1] (nec Cand.).

*Hypodesis chrysomalla*, Cand. Monogr. Elat. iv. p. 244 [2].

*Hab.* Mexico [1], Toxpam, Cordova, Orizaba (*Sallé* [2]), Fortin in Vera Cruz (*H. H. Smith*), Jalapa, Tapachula (*Höge*); Guatemala, Coban (*Conradt*), San Juan in Vera Paz, Zapote (*Champion*).

Sent in plenty from Jalapa. The three specimens from San Juan (abraded females) have the thorax less closely punctured than usual, but they appear to belong here rather than to *H. penicillata*. *H. chrysomalla* is probably a variety of *H. sericea*,

which occurs also at Toxpam, Cordova, and Jalapa, but differs from it in the rather less densely punctured thorax and elytra, and the paler and more golden pubescence of the upper surface. The males are considerably smaller than the corresponding sex of *H. sericea*, with the hind angles of the thorax a little more divergent. The elytra vary in colour from brownish-black to reddish-brown, being often paler towards the base; the interstices are thickly and equally punctured throughout. In some of the fresher specimens the hairs appear to be transversely combed inwards towards the suture. The females are sometimes much larger, broader, and more elongate than the males. If Germar has correctly identified Latreille's species, the name *H. sericea* should be applied to this insect.

### 3. **Hypodesis aureipilis.** (Tab. XXI. fig. 22, ♀.)

Moderately elongate, broad, robust, feebly shining; reddish-brown or castaneous, darker beneath, the legs obscure testaceous or brown; above and beneath thickly clothed with long and rather coarse golden hairs, the hairs on the prothorax and on the second elytral interstice obliquely or transversely combed inwards, the first four ventral segments each with a matted tuft of hairs at the sides behind. Head coarsely, rugosely punctate, depressed in front; antennæ extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth strongly serrate, 3 nearly as long as 4. Prothorax convex, much broader than long, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles long and divergent, carinate; the surface thickly, coarsely punctate, a narrow space down the middle behind and a small space on either side of the disc before the middle impunctate, very distinctly canaliculate. Elytra about three and one-fourth times the length of the prothorax, rapidly narrowing from a little below the base in the male, subparallel in their basal third in the female; finely punctate-striate, the punctures becoming coarse and deep towards the sides, the striæ deeply impressed on the basal declivity and also becoming deeper towards the apex, the interstices flat, the second and fourth densely, the others distinctly more sparsely and a little more coarsely, punctate. Beneath sparsely and finely, the prosternum and propleuræ coarsely, punctured; the ventral segments each with a small glabrous spot at the sides.

Length 10–11½, breadth 3⅛–3⅔ millim. (♂ ♀.)

*Hab.* Panama, Bugaba (*Champion*), Chiriqui (*Ribbe*).

Six examples. Very like *H. chrysomalla*, but differing from it in the unequally punctured elytral interstices (the second and fourth being distinctly more densely punctured than the others) and the coarsely punctured disc of the thorax; also in the shorter and more convex thorax in the males, the sides being more rounded anteriorly and less rapidly converging. The more transverse thorax and the less coarsely punctured elytral striæ distinguish *H. aureipilis* from *H. punctata*.

### 4. **Hypodesis cribricollis.**

*Hypodesis cribricollis*, Cand. Monogr. Elat. iv. p. 246[1].

*Hab.* Mexico (*Sallé*[1]), Jalapa (*Höge*).

Four specimens of this insect have been examined, including the types; they appear to be all females. *H. cribricollis* may be separated from *H. sericea* and *H. chrysomalla*

by the densely and rugosely punctured thorax, with the median groove indistinct. All three occur at Jalapa.

### 5. **Hypodesis punctata.**

*Hypodesis punctata,* Cand. Monogr. Elat. iv. p. 245 [1].

*Hab.* MEXICO, Tapachula in Chiapas (*Höge*); GUATEMALA, Yzabal (*Sallé* [1]), Teleman and Chacoj in Vera Paz, Zapote (*Champion*).

This species may be distinguished from *H. chrysomalla* by the coarsely punctured elytral striæ, the striæ themselves being shallow or almost obliterated. In four out of the five specimens from Tapachula, and in the two from Zapote, probably all males, the seriate punctures on the elytra are still coarser and deeper towards the sides, there becoming as broad as the interstices, the striæ are obsolete, and the hairs on each of the outer interstices are seriately arranged. Females only (including the types) have been received from the Atlantic slope; both sexes from the Pacific slope. The males appear to have the third elytral interstice a little more densely punctured than the others.

### 6. **Hypodesis penicillata.** (Tab. XXI. fig. 23, ♀.)

*Hypodesis penicillata,* Cand. Monogr. Elat. iv. p. 244 [1].

*Hab.* MEXICO, Playa Vicente and San Andres Tuxtla in Vera Cruz (*Sallé*), Fortin in Vera Cruz (*H. H. Smith*), Teapa in Tabasco (*coll. Janson*); GUATEMALA, Yzabal (*Sallé* [1]), Panzos in Vera Paz (*Champion*).—COLOMBIA (*coll. Janson*).

Closely allied to *H. chrysomalla*, but differing from it in the more sparsely punctured thorax, and in the sparser and less conspicuous pubescence of the elytra. The thorax is clothed with long decumbent golden hairs, these at the base in the middle being so arranged as to form a broad pencil or tuft, which projects over the anterior part of the scutellum. The hairs on the abdomen form a matted tuft on the outer part of each segment behind. The locality "Yzabal" given for this species and *H. punctata* is in Guatemala, not in Honduras as stated [1]. One of the types is figured.

### 7. **Hypodesis auricoma.** (Tab. XXI. fig. 24, ♀.)

Moderately elongate, broad, robust, shining; black, the elytra with a faint bluish or greenish lustre, the legs pitchy-brown; the head and prothorax clothed with long, coarse, decumbent, bright golden hairs, those on the prothorax transversely or obliquely combed inwards, the hairs at the centre of the base forming a projecting tuft; the elytra with a few golden hairs at the extreme apex only, for the rest apparently glabrous (under a high magnifying-power minute scattered hairs are visible in fresh specimens); the legs and under surface also clothed with bright golden hairs, which form dense matted tufts at the sides of the first four ventral segments behind. Head coarsely, rather sparsely punctate, depressed in front; antennæ extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth strongly serrate, 3 nearly as long as 4. Prothorax convex, strongly transverse, narrowed in front, the sides rounded anteriorly and sinuate behind; the hind angles long and moderately divergent,

carinate, the carina extending forwards to the middle of the prothorax; the surface rather sparsely punctate (the punctures coarser and closer in some specimens than in others), a narrow space down the centre, and sometimes a small space on either side of the disc before the middle, impunctate, very distinctly canaliculate. Elytra from two and two-thirds to three times the length of the prothorax, rapidly narrowing from a little below the base, the apices rather narrow; very finely punctate-striate, the punctures becoming coarser towards the sides and apex, the striæ very shallow or almost obsolete on the disc, distinct at the apex, and deeply impressed on the basal declivity, the interstices flat and very finely somewhat thickly punctate. Beneath very sparsely punctured, the prosternum coarsely and closely punctate in front; the suture between the meso- and metasternum obliterated in the middle.

Length 11–12, breadth $3\frac{2}{5}$–4 millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

Var. *α*. The prothorax, except at the apex, and propleuræ rufous or ferruginous, sometimes black at the sides.

*Hab.* Panama, Bugaba (*Champion*).—Colombia (*coll. Janson*).

Var. *β*. The prothorax, except along the margins and apex, the propleuræ in part, and the sides of the metasternum, rufo-ferruginous or rufo-castaneous; the elytra brownish-testaceous or rufo-castaneous, with the suture narrowly infuscate; the legs obscure testaceous or fusco-ferruginous.

*Hab.* Nicaragua, Chontales (*Belt*, *E. M. Janson*).

Sixteen specimens of the typical form, four of the variety *α*, and four of the variety *β*. The punctuation of the thorax is variable, it being much coarser and closer in some specimens than in others. *H. auricoma* may be at once known from all the species of the genus described by Candèze by the almost glabrous elytra. The tufts of hair at sides of the ventral segments are partly visible from above.

### 8. **Hypodesis vittata.** (Tab. XXI. fig. 25, ♂, var.)

*Hypodesis vittata*, Cand. Monogr. Elat. iv. p. 246, t. 3. fig. 11 [1].

*Hab.* Mexico, San Andres Tuxtla, near Cordova (*Sallé* [1]); Nicaragua, Chontales (*Belt*, *E. M. Janson*); Costa Rica (*coll. Janson*); Panama, Volcan de Chiriqui 4000 feet (*Champion*).

I have seen twelve examples of this widely distributed very distinct species. The piceous or black discoidal patch on the thorax varies in extent, it being in some specimens reduced to four spots, and in others almost obsolete; the hind angles are without distinct carina. The yellowish marginal stripe of the elytra is sometimes obliterated. The abdomen and metasternum are clothed at the sides with a belt of long, felted, pale golden hairs, the rest of the under surface being rather sparsely pubescent. The type described by Candèze is a small male; some of the females are much larger. A specimen from Chontales is figured.

### 9. **Hypodesis viridipennis.** (Tab. XXI. fig. 26, ♂.)

Elongate, broad, robust, shining; black, the elytra with a greenish lustre, the legs and antennæ piceous; above very sparsely clothed with long, fine, decumbent yellowish-cinereous hairs, the lower surface with widely scattered whitish hairs, the first four ventral segments each with a matted tuft of whitish hairs at the

sides behind. Head very coarsely, irregularly punctate, flattened in front; antennæ extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth strongly serrate, 3 as long as, but narrower than, 4. Prothorax much broader than long, flattened on the disc and narrowing from the base in the male, more convex and rounded at the sides anteriorly in the female; the hind angles long and strongly divergent, carinate; the surface coarsely, rather sparsely punctate, the punctuation becoming closer towards the sides and apex, much finer and sparser on the disc in the females, sometimes obsoletely canaliculate and with indications of a narrow smooth space down the centre at the base. Elytra from three and one-quarter to three and two-thirds the length of the prothorax, gradually narrowing from about the basal third, more parallel in the female in one specimen; very finely punctate-striate, the punctures not very closely placed, becoming coarser towards the sides, the striæ obsolete on the disc in some specimens and on the basal declivity deeply impressed, the interstices flat and sparsely, very finely punctate. Beneath sparsely and finely, the prosternum and propleuræ coarsely, punctured, the ventral segments each with a large space at the sides impunctate, the prosternal process also impunctate along the middle; the suture between the meso- and metasternum obliterated in the centre.

Length 13½–16, breadth 4–5 millim. (♂ ♀.)

*Hab.* British Honduras (*coll. Janson*); Guatemala, Senahu and Purula in Vera Paz (*Champion*).

Five specimens, four of which are from Guatemala. This insect is not closely allied to any of the other members of the genus, from all of which it may be known at a glance by the large glabrous impunctate space at the sides of each of the ventral segments. The pubescence is long, fine, and sparse, and easily abraded, two of the specimens appearing to have the elytra almost glabrous. The punctuation of the thorax is much coarser and closer in the males than in the females; the latter have the elytral striæ almost obsolete on the disc, and the interstices very sparsely and minutely punctate. The tufts of whitish hairs at the sides of the ventral segments are conspicuous from above.

## Group **CARDIORHINI.**

## CARDIORHINUS.

*Cardiorhinus*, Eschscholtz, in Thon's Archiv, ii. 1, p. 34 (1829); Candèze, Monogr. Elat. iv. p. 247.

The thirty-six described species of this genus are all from South America, one of them being found as far south as Buenos Ayres. A single species is now added from our region.

### 1. **Cardiorhinus binotatus.** (Tab. XXI. fig. 27, ♀.)

Elongate, rather narrow, shining, very sparsely and finely pubescent; above testaceous, a narrow stripe down the centre of the prothorax, and a small rounded or oblique spot on the outer part of the disc of each elytron at the middle, black; beneath ferruginous. Head coarsely and closely umbilicate-punctate; antennæ nearly reaching the hind angles of the prothorax, joint 3 as long as 4. Prothorax moderately convex, a little longer than broad, rounded at the sides anteriorly; the hind angles long and stout, strongly divergent, incurved at the tip, and sharply carinate; the surface sparsely, coarsely punctate, the punctuation becoming excessively coarse, umbilicate, and crowded towards the sides and sparser and finer at the base, deeply canaliculate behind. Elytra three times the length of the prothorax, flattened on the

disc, rapidly narrowing from about the basal third, somewhat attenuate at the apex; punctate-striate, the punctures coarse and closely placed, becoming very fine towards the suture, the interstices flat on the disc, convex at the sides, and very sparsely, minutely punctate. Metasternum and abdomen very finely and diffusely, the prosternum and propleuræ very coarsely, punctured, the propleuræ more closely impressed with excessively coarse, umbilicate punctures; mesosternum declivous, depressed.

Length $11\frac{1}{2}$–13, breadth 3–$3\frac{1}{3}$ millim. (♀.)

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt*, *E. M. Janson*).

Seven specimens, probably all females. Allied to *C. frenatus* (Germ.), from Brazil, but with the thorax very much more coarsely punctured, the hind angles more divergent and incurved at the tip, the elytra differently coloured, &c. The insect is unknown to Dr. Candèze.

## Group **LUDIINI.**

## TOMOCEPHALUS.

*Tomicephalus*, Latreille, Ann. Soc. Ent. Fr. 1834, p. 146; Candèze, Monogr. Elat. iv. p. 284.
*Tomocephalus*, Gemminger and Harold, Cat. v. p. 1587; Candèze, Cat. Méthod. Elat. p. 187.
*Megacnemis*, Eschscholtz, in Silb. Revue Ent. iv. tab. (1836); Castelnau, Hist. Nat. Ins. Col. i. p. 239 (1840).

A Tropical-American genus containing four described species; three others are now added. All but one inhabit Central America, five not being known from south of the Isthmus of Panama.

*a*. Body flattened above; elytral apices distinctly flattened.
  *a'*. Black, the prothorax and propleuræ, and sometimes the metasternum and abdomen in part, sanguineous; prothorax broader than long . . . . *substriatus*.
  *b'*. Black, the abdomen and metasternum usually in part sanguineous; prothorax as long as broad . . . . . *melanotus*.
*b*. Body more convex above; elytral apices not flattened.
  *c'*. Black, the abdomen usually in great part sanguineous or rufous . . . *abdominalis*.
  *d'*. Black, the prothorax, prosternum, and propleuræ rufous . . . . . *sardioderus*.
  *e'*. Black, the elytra with the basal half or more, except along the suture, flavous . . . . . *bicolor*.
  *f'*. Head black, with a reddish spot in front; prothorax rufo-ferruginous, with a transverse black median fascia; elytra flavous, with the suture very broadly and the margins narrowly black; beneath partly black . . *insignis*.

### 1. **Tomocephalus substriatus.** (Tab. XXII. fig. 1, ♂.)

*Tomicephalus substriatus*, Cand. Monogr. Elat. iv. p. 286[1]; Steinh. Col. Hefte, xiv. p. 133[2].
*Tomocephalus substriatus*, Cand. Cat. Méthod. Elat. p. 188[3].

*Hab.* MEXICO (*coll. Janson*), San Andres Tuxtla (*Sallé*); NICARAGUA (*Sallé*), Chontales

(*Belt*, *Richardson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia [2]; Venezuela [1 3]; Ecuador; Brazil.

Not uncommon in Central America, though it has not yet been received from Guatemala (where it should occur on the Atlantic slope). It varies greatly in size, some of the males being no larger than *T. sardioderus*, and in the colour of the metasternum and abdomen, these parts (the apex of the latter excepted) being sanguineous in one of the Colombian specimens before me. The prosternum is always black or piceous. *T. substriatus* is extremely closely allied to the South-American *T. sanguinicollis*, Latr., but may be separated from it by the elytra not being distinctly carinate externally at the apex. A male from Chiriqui is figured.

## 2. **Tomocephalus melanotus.** (Tab. XXII. fig. 2, ♀.)

*Tomicephalus sardioderus*, var. *a*, Cand. Monogr. Elat. iv. p. 286 [1].

Elongate, flattened above, very shining, deep black; beneath entirely black, or with the first three or four ventral segments, and sometimes the whole or part of the metasternum also, sanguineous; the tarsal claws rufous; above very sparsely clothed with long, fine, blackish hairs, which are erect on the head and prothorax and decumbent on the elytra, beneath very sparsely clothed with fulvo-cinereous hairs. Head sparsely, coarsely punctate; antennæ stout, extending to about three joints beyond the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth broadly widened and serrate. Prothorax as long as broad, subconical, rapidly narrowing from the base forwards, the sides a little rounded anteriorly and very feebly sinuate behind; the hind angles moderately long, divergent, slightly incurved at the tip, carinate; the surface with very widely scattered punctures, which are fine on the disc, but become coarser towards the sides and apex, deeply canaliculate behind, and with a space down the centre from the middle to the base impunctate. Elytra about three and one-fifth times longer than the prothorax, rapidly narrowing from the base, broadly and deeply depressed in front near the shoulders and also depressed along either side of the suture to the apex, the sutural angles mucronate and slightly dehiscent; finely, confusedly, and somewhat thickly punctate, and with indications of faint longitudinal furrows. Beneath very sparsely punctured.

Length $11\frac{1}{5}$–13, breadth (of the base of the elytra) 3–$3\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Cordova (*Sallé* [1]); Guatemala, Cerro Zunil, San Isidro, Zapote (*Champion*).

Found not uncommonly on the Pacific slope of Guatemala. The single specimen from Mexico is the only one received with the abdomen and metasternum entirely black. Larger and less convex than *T. abdominalis*; the thorax wider behind, more conical in shape in both sexes, and more coarsely punctured at the sides and in front; the elytra wider at the base (appearing more attenuate), more flattened on the disc, especially at the apex, and with faint longitudinal furrows (the one next the suture distinct), the basal depressions larger and deeper and with distinct longitudinal grooves indicating the position of the striæ. Apart from the difference in the colour of the thorax, *T. melanotus* may be easily separated from *T. substriatus* by its more elongate thorax. A Guatemalan specimen is figured.

### 3. **Tomocephalus abdominalis.**

*Tomocephalus abdominalis*, Cand. Ann. Soc. Ent. Belg. 1889, p. 118 (Elat. Nouv. iv. p. 52) [1].

*Hab.* MEXICO, San Andres Tuxtla (*Sallé*); GUATEMALA, Senahu and Sinanja in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*), Chiriqui [1].

I have seen ten specimens of this species, including the type, kindly sent by Dr. Candèze for examination. In all of them the abdomen is sanguineous or rufous, except at the apex.

### 4. **Tomocephalus sardioderus.** (Tab. XXII. fig. 3, ♀.)

*Tomicephalus sardioderus*, Cand. Monogr. Elat. iv. p. 286 [1] (excl. var.).
*Tomocephalus sardioderus*, Cand. Cat. Méthod. Elat. p. 188 [2].

*Hab.* MEXICO [2], Cordova (*Sallé* [1]).

The description of this insect is not clear, as it appears to have been made from more than one species. Of the four Mexican specimens representing it in the Sallé collection, apparently all females, one is certainly referable to *T. substriatus*, one to *T. abdominalis* (agreeing with the type of that species), one, the only example I have seen, to *T. sardioderus*, and one to the insect here described under the name *T. melanotus*. The example (♀) of *T. sardioderus* does not, however, differ from the S.-American *T. sanguinicollis*, Latr., in having the thorax more elongate as stated [1], this remark applying to *T. abdominalis* and *T. melanotus* only; it is closely allied to *T. abdominalis*, of which it may be a colour-variety, but differs from it in having the elytra a little more closely punctured. From *T. substriatus* (♀) it may be separated by the more convex and less coarsely punctured thorax, the sides of which are more rounded, the less flattened apex of the elytra, and the rufous prosternum.

### 5. **Tomocephalus bicolor.** (Tab. XXII. fig. 4, ♂.)

Elongate, narrow, rather convex, very shining; deep black, the elytra with the basal half or three-fifths, except along the suture, flavous or stramineous, the tarsal claws rufous; above rather sparsely clothed with long hairs, which are erect on the head and prothorax and semierect on the elytra, and partake of the ground-colour, the under surface sparsely clothed with decumbent fulvo-cinereous hairs. Head sparsely, rather finely punctate; antennæ in the male nearly half the length of the body, shorter in the female, the joints from the fourth broadly widened and serrate. Prothorax almost as long as broad in the male, shorter in the female, strongly narrowed in front, the sides rounded at the middle and sinuate behind; the hind angles moderately long and divergent, slightly incurved at the tip, carinate; the surface with widely scattered fine punctures. Elytra about three and one-fourth times the length of the prothorax, a little flattened on the disc, rounded at the apex, the sutural angles rather sharp, the base depressed near the shoulders; with widely scattered, irregularly arranged, very fine punctures, and, on the flavous portions, with regular rows of coarse punctures showing through from beneath the surface. Beneath very sparsely, finely punctate.

Length $8\frac{3}{4}$–11, breadth $2\frac{1}{4}$–3 millim. (♂ ♀.)

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt, E. M. Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Fourteen examples, eight of which are from Chiriqui. Allied to *T. abdominalis*, but differing from it, apart from colour, in having the thorax a little less elongate, with the sides more rounded at the middle and more sinuate behind. Some of the females are much broader than others, with the thorax more closely punctured. The insect resembles a small *Ypsilostethus* or *Semiotus*. A male from Chiriqui is figured.

### 6. **Tomocephalus insignis.** (Tab. XXII. fig. 5, ♀.)

*Tomocephalus insignis*, Jans. in litt.

Elongate, robust, rather broad, very shining; head, antennæ, and scutellum black, the head with a reddish-yellow spot in front; the prothorax rufo-testaceous or rufo-ferruginous, with a transverse black median fascia extending to near the sides, the sides and base in some specimens indeterminately flavous, the basal margin black; the elytra each with a tapering flavous or stramineous stripe on the disc, occupying the entire width at the base, and extending to near the apex, the suture broadly and the sides narrowly, the epipleuræ included, black; beneath black, the prosternum, except in front and behind, and the outer portion of the propleuræ, flavous, the metasternum at the sides and in front reddish-yellow; the legs piceous; above somewhat thickly clothed with long hairs, which are erect on the head and prothorax and decumbent on the elytra, the hairs yellow on the yellow portions and blackish on the other parts, the under surface and legs thickly clothed with fulvo-cinereous hairs. Head rather coarsely, closely punctate; antennæ extending considerably beyond the hind angles of the prothorax, the joints from the fourth widened and serrate, 3 a little longer than 4. Prothorax broader than long, convex, rapidly narrowing from the base, the sides rounded from about the middle forwards and sinuate behind; the hind angles divergent, moderately long, carinate; the surface somewhat closely, rather finely punctate, the punctuation becoming finer and more scattered at the base, canaliculate behind. Elytra about three and one-fifth times the length of the prothorax, flattened on the disc, rapidly narrowing from the base, the apices conjointly rounded; finely, somewhat thickly, confusedly punctate, and with shallow longitudinal furrows or obsolete striæ, each of which is indicated, on the flavous portions, by a regular row of coarsish punctures showing through from beneath the surface. Beneath finely and somewhat closely punctate, the prosternum and propleuræ with widely scattered coarser impressions.

Length 13½–15, breadth 3¾–4⅓ millim. (♀.)

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt*, *E. M. Janson*).

Seven examples, probably all females. Very different from any of the described species of the genus. The thorax is more convex than in *T. substriatus* and its allies.

## LUDIUS.

*Ludius*, Latreille, Fam. Nat. Règne Anim. p. 349 (1825) (nec Eschscholtz); Candèze, Monogr. Elat. iv. p. 294; Cat. Méthod. Elat. p. 188 (1891); Horn, Trans. Am. Ent. Soc. xii. p. 45.

*Steatoderus*, Eschscholtz, in Silb. Rev. Ent. iv. tab. (1836); Buysson, Faune Gallo-Rhénane, Elat. p. 60 (1894).

*Crigmus*, Leconte, Trans. Am. Phil. Soc. new ser. x. p. 453 (1853).

This widely-distributed genus contains about sixty-four described species, seventeen of which are American. As adopted here, it also includes *Probothrium rufipes* and *P. physorhinus*, Cand., these species differing from Candèze's definition of *Probothrium* in the gradually declivous (not vertical) mesosternum and the less prominent intercoxal portion of the metasternum; *P. setosum* (Germ.) also seems to me to be better placed here. The Central-American species may be separated into three groups by the form

of the prosternal process, a character overlooked by Candèze and others, and one which may eventually be considered to be of generic value *. Good differential characters are also to be found in the form of the prosternal sutures, the exterior of the two being in some species almost completely obliterated, and in others sharply defined, with the enclosed space impunctate. Our species all belong to Section III. of Dr. Candèze's Monograph.

*a*. Prosternal process extended in the plane of the prosternum to the ante-apical tooth; intercoxal portion of the mesosternum declivous.
  *a'*. Outer prosternal suture almost obliterated, the propleural punctuation extending inwards; third joint of the antennæ much longer than the second; elytra obsoletely striate. Species large and robust . . . . . *cylindricollis.*
*b'*. Outer prosternal suture usually well-defined (except in *L. tropicalis*), the space enclosed impunctate or nearly so. Species smaller and narrower.
  *a''*. Third joint of the antennæ not, or not very much, longer than the second.
    *a'''*. Elytra moderately elongate, at most obsoletely striate.
      $a^4$. Punctuation of the prothorax sparse and coarse, that of the elytra also sparse and rather rugose; antennæ very elongate in the male . . . *nigricollis.*
      $b^4$. Punctuation of the prothorax rather close and coarse, that of the elytra fine and close; antennæ short in the male . . . . . *isthmicus.*
      $c^4$. Punctuation dense and moderately coarse, that of the elytra fine and close; antennæ moderately elongate in the male.
        $a^5$. Prothorax opaque, very densely punctured; pubescence dense; antennæ with joints 2 and 3 subequal . . . . . *subsericeus.*
        $b^5$. Prothorax subopaque, densely punctured; pubescence sparser; antennæ with joint 3 distinctly longer than 4 . . . . . *subopacus.*
    *b'''*. Elytra comparatively short, deeply punctate-striate . . . . . *breviusculus.*
  *b''*. Third joint of the antennæ nearly equal to the fourth; punctuation of the prothorax and elytra close; elytra obsoletely striate . . . . . *tropicalis.*
*b*. Prosternal process gradually declivous behind the coxæ; intercoxal portion of the mesosternum declivous, not or feebly raised anteriorly; third joint of the antennæ slightly longer than the second.
  *c'*. Outer prosternal suture almost obliterated, the propleural punctuation extending inwards.
    *c''*. Elytra rather coarsely punctate-striate; body moderately convex . . . *rubicundus.*
    *d''*. Elytra very finely striate; body very elongate, depressed, subparallel . . *depressus.*
  *d'*. Outer prosternal suture well-defined, the space enclosed impunctate; body rather elongate, moderately convex; elytra narrowing from the base, punctate-striate . . . . . *physorhinus.*
*c*. Prosternal process abruptly and perpendicularly declivous a little behind the coxæ, and subhorizontally extended thence to the ante-apical tooth; the

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* Lewis, in his paper on the Elateridæ of Japan [Ann. & Mag. Nat. Hist. (6) xiii. p. 266], applies the name *Ludius* to the first group, and *Crigmus*, Lec., to the third group; he takes *L. hepaticus*, Germ. (nec Lec.), as the type of *Crigmus*, but, unfortunately, neither of the two species originally included in *Crigmus* possesses the characters he assigns to it.

intercoxal portion of the mesosternum subangularly raised anteriorly; outer prosternal suture faint or interrupted, the space enclosed sparsely punctate; third joint of the antennæ short, very little longer than the second; elytra finely striate. Species large and robust.

*e'*. Antennæ broadly dilated and acutely serrate in male . . . . . *setosus.*

*f'*. Antennæ moderately dilated and serrate in male . . . . . *meridanus.*

1. **Ludius cylindricollis.** (Tab. XXII. figg. 6, ♀; 6 *a*, prosternal process.)

♀. Moderately elongate, broad, robust, shining; nigro-piceous, the legs and antennæ ferruginous; above and beneath somewhat thickly clothed with short, decumbent, fulvous pubescence. Head thickly, coarsely punctate; antennæ short, not nearly reaching the hind angles of the prothorax, the joints from the fourth moderately dilated and serrate, 3 considerably longer than 2, the two together longer than 4, 11 appendiculate. Prothorax convex, about as long as broad, with the sides subparallel in their median third, and rounded in front, slightly widening behind, the marginal carina visible from above towards the base only; the hind angles long, straight, and very sharply, obliquely carinate, the carina extending for some distance forwards; the surface coarsely and somewhat thickly punctate, the punctuation sparse on the basal declivity. Elytra two and two-thirds longer than the prothorax, rapidly narrowing from about the middle, becoming very narrow at the apex, the apices rather sharp; thickly, finely, rugulosely punctate, with the sutural stria only distinct, the others almost obsolete. Beneath finely and somewhat thickly, the prosternum and propleuræ coarsely and more sparsely, punctate; prosternal process long, extended in the plane of the prosternum for two-thirds of its length, the ante-apical tooth very prominent; intercoxal portion of the mesosternum declivous, V-shaped; posterior coxal plates broadly widened in their inner third, triangularly dilated opposite the point of insertion of the femora.

Length 21½, breadth 6 millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

One example. This insect resembles *L. setosus*, but may be known from it by the longer thorax, the more coarsely punctured propleuræ, the very differently formed pro- and mesosternum, and the triangularly dilated posterior coxal plates. From the North-American *L. hepaticus*, Lec., it differs in the more cylindrical thorax, the long, horizontal prosternal process, the triangularly dilated coxal plates, the obliteration of the elytral striæ (the first excepted), &c.

2. **Ludius nigricollis.** (Tab. XXII. figg. 7, ♂; 7 *a*, antenna.)

Elongate, narrow, rather convex, shining; castaneous-brown, the elytra with the basal declivity usually rufous, and in some specimens the sides from a little below the shoulder to about the middle indeterminately piceous, the prothorax black, with the basal and apical margins and the hind angles usually castaneous; beneath black, the apex of the abdomen and the hind coxæ reddish-brown, the antennæ and legs ferruginous; above and beneath sparsely clothed with rather long, decumbent, fulvous hairs. Head thickly, somewhat coarsely punctate; antennæ nearly half the length of the body in the male, much shorter in the female, rather slender, joints 2 and 3 very short, equal, 4–11 moderately serrate, 4 in both sexes very much longer than 2 and 3 united, 11 appendiculate. Prothorax convex, nearly as long as broad, gradually narrowing from the base forwards, the sides rounded anteriorly, the posterior portion only of the marginal carina visible from above; the hind angles long, slightly divergent, a little incurved at the tip, sharply, obliquely carinate; the surface sparsely and moderately coarsely punctate, deeply canaliculate behind. Elytra three times the length of the prothorax, slightly rounded at the sides, rapidly narrowing from a little below the base, the apices narrow and conjointly rounded; somewhat sparsely, rugosely punctate, subgranulate towards the base, the sutural stria only well defined, the others indistinct or obsolete. Beneath thickly, the propleuræ sparsely, punctate, the punctures on the prosternum

and the sides of the metasternum coarse, the others moderately fine; prosternal process extended almost in the plane of the prosternum to the very acute ante-apical tooth; intercoxal portion of the mesosternum declivous, slightly tuberculate at the sides anteriorly; posterior coxal plates acutely, triangularly dilated at their inner third.

Length $13\frac{1}{4}$–15, breadth $3\frac{1}{2}$–$3\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Found in plenty in Chiriqui. The females are very similar to the males, from which they differ in their much shorter antennæ. Closely allied to the Colombian *L. brunnipilis*, Cand., but differing from that insect in the obliteration of the elytral striæ (the first excepted), and the less parallel elytra, as well as in coloration. Both species have very elongate antennæ in the male sex. The thorax in *L. brunnipilis* is distinctly canaliculate along the middle, at the base only in *L. nigricollis*.

### 3. Ludius isthmicus.

Moderately elongate, convex, rather broad, shining; piceous or pitchy-brown, the antennæ and legs brownish; somewhat thickly clothed with short, decumbent, fulvo-cinereous pubescence. Head closely, somewhat coarsely punctate; antennæ not quite reaching the hind angles of the prothorax in the male, scarcely shorter in the female, joints 2 and 3 short, subequal, 4–11 moderately widened and serrate, 11 appendiculate. Prothorax broader than long, gradually narrowing from a little before the base, rounded at the sides in front, parallel behind, the posterior portion only of the marginal carina visible from above; the hind angles long, not divergent, sharply, obliquely carinate; the surface closely and rather coarsely punctured, the punctuation sparser on the disc, with indications of a smooth central line, obsoletely canaliculate at the base. Elytra about two and three-fourths longer than the prothorax, slightly rounded at the sides, narrowing from a little below the base, conjointly rounded at the apex; closely, finely, rugulosely punctate, obsoletely striate, the sutural stria well-defined. Beneath thickly, the prosternum sparsely and more coarsely, punctured; prosternal process extended in the plane of the prosternum to the ante-apical tooth; intercoxal portion of the mesosternum V-shaped, gradually declivous; posterior coxal plates broadly widened inwards, arcuately dilated opposite the insertion of the femora.

Length $15\frac{1}{2}$–$17\frac{1}{2}$, breadth $4\frac{1}{3}$–$5\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* PANAMA, Bugaba (*Champion*).

Five specimens. The sexes are scarcely separable by external characters. This insect somewhat resembles *L. physorhinus*, and is of the shape of the female of that species; but it is much larger, the elytral punctuation is closer and finer, the striæ are almost obsolete (the first excepted), the coxal plates are less dilated at their inner third, the antennæ are much shorter in the male, and the prosternal process is not declivous.

### 4. Ludius subsericeus.

*Ludius subsericeus*, Cand. Monogr. Elat. iv. p. 309 [1].

*Hab.* MEXICO, Cordova and Playa Vicente in Vera Cruz (*Sallé* [1]).

Four specimens of this species have been examined, including the type, apparently all males. *L. subsericeus* chiefly differs from its allies in its subopaque, densely pubescent surface, densely punctured thorax, narrow shape, and pallid legs. The prosternal process is horizontal.

## 5. Ludius subopacus.

Elongate, rather narrow, subopaque; pitchy-black, piceous, or castaneous-brown, the antennæ black or brown, the legs brown or obscure testaceous; above and beneath thickly clothed with short, fine, decumbent, yellowish-cinereous pubescence. Head closely, rather coarsely punctate; antennæ extending to fully two joints beyond the hind angles of the prothorax in the male, a little shorter in the female, rather slender, joints 4–11 moderately serrate, 3 considerably longer than 2, the two together as long as 4, 11 appendiculate. Prothorax convex, as long as broad, the sides gradually converging from the base and a little rounded in front in the male, more rounded in the female, the marginal carina visible from above towards the base only; the hind angles long, sharply and obliquely carinate; the surface densely, rather coarsely punctate, with indications of a smooth central line towards the base. Elytra three times the length of the prothorax, narrowing from a little below the base, more parallel in their basal half in the female, the apices narrow and conjointly rounded; rugulose and closely, finely punctate, subgranulate at the base, the sutural stria distinct, the others faintly indicated. Beneath thickly and finely, the prosternum sparsely and more coarsely, punctured; prosternal process extended in the plane of the prosternum to the ante-apical tooth; intercoxal portion of the mesosternum V-shaped, gradually declivous; posterior coxal plates broadly, subangularly dilated opposite the point of insertion of the femora.

Length $12\frac{1}{2}$–$14\frac{1}{2}$, breadth $3\frac{2}{5}$–4 millim. (♂ ♀.)

*Hab.* Guatemala, Sabo and Sinanja in Vera Paz (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Ten specimens, one only of which is from Chiriqui. Larger and more elongate than *L. subsericeus*, the thorax less densely and not so coarsely punctured, the upper surface less opaque, the pubescence sparser, the third joint of the antennæ considerably longer than the second.

## 6. Ludius breviusculus. (Tab. XXII. fig. 8, ♂.)

Comparatively short, rather narrow, moderately shining; pitchy-black, the antennæ and legs obscure ferruginous; somewhat thickly clothed with short, decumbent, fulvous pubescence. Head closely, coarsely punctate; antennæ extending to about two joints beyond the base of the prothorax, joints 2 and 3 very short, equal, together not nearly so long as 4, 4–11 moderately dilated and serrate, 11 appendiculate. Prothorax convex, slightly broader than long, the sides almost straight and very gradually converging forwards, rounded in front, the posterior portion only of the marginal carina visible from above; the hind angles long and sharply carinate; the surface closely, coarsely punctate, canaliculate from the middle to the base. Elytra two and one-half times the length of the prothorax, narrowing from the middle, conjointly rounded at the apex; rather deeply punctate-striate, the interstices almost flat and thickly, rugulosely punctate. The prosternum coarsely and rather sparsely, the propleuræ coarsely and very sparsely, and the rest of the under surface closely and finely, punctured; prosternal process extended in the plane of the prosternum to the ante-apical tooth; intercoxal process of the metasternum V-shaped, depressed, gradually declivous; posterior coxal plates rather broadly widened in their inner third, becoming narrow outwards.

Length $9\frac{2}{3}$, breadth $2\frac{3}{4}$ millim. (♂.)

*Hab.* Nicaragua, Chontales (*E. M. Janson*).

One example. Smaller and less elongate than any of the other Central-American species of the genus, and with the elytral striæ more sharply defined. *L. breviusculus* somewhat resembles *L. physorhinus*, but it is much more parallel than that insect, and has shorter elytra and the prosternal process not declivous. The second and third joints of the antennæ are very short.

## 7. Ludius tropicalis.

Elongate, rather broad, slightly shining; castaneous- or pitchy-brown, the legs fusco-testaceous; somewhat thickly clothed with short, fine, decumbent, fulvous or fulvo-cinereous pubescence. Head closely, coarsely punctate; antennæ extending very little beyond the hind angles of the prothorax, rather slender, joint 3 nearly twice as long as 2, and slightly shorter than 4, 11 appendiculate. Prothorax convex, as long as broad, the sides subparallel to the middle and rounded thence to the apex, the anterior half of the marginal carina not visible from above; the hind angles long and sharply, obliquely carinate; the surface closely, somewhat coarsely punctate. Elytra from two and two-thirds to three times the length of the prothorax, slightly rounded at the sides, narrowing from about the basal third, conjointly rounded at the apex; rugulose and closely, finely punctate, subgranulate at the base, the sutural stria distinct, the others obsolete or faintly indicated. Beneath thickly and finely, the prosternum sparsely and more coarsely, punctured; prosternal process extended in the plane of the prosternum to the ante-apical tooth; intercoxal portion of the mesosternum **V**-shaped, gradually declivous; posterior coxal plates broadly and subangularly dilated opposite the point of insertion of the femora.

Length 14–16, breadth 4–4½ millim. (♀.)

*Hab.* Guatemala, Senahu in Vera Paz (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Two specimens: the one from Chiriqui is a female, and the other is probably a male. The Senahu example differs from the one from Chiriqui in having the thorax less densely punctured, and the elytra more elongate, with the striæ (the sutural one excepted) obsolete. Allied to *L. subopacus*, but separable from it, and the other species here enumerated, by the more elongate third antennal joint, this joint nearly equalling the fourth. *L. tropicalis* is also broader and more robust than the female of *L. subopacus*, in this respect approaching *L. isthmicus*, from which it may be known by the denser punctuation of the upper surface, as well as by the structure of the antennæ.

## 8. Ludius rubicundus.

*Ludius rubicundus,* Cand. Elat. Nouv. v. p. 58 (1893)[1].

"Brunneo-ferrugineus, pube longiuscula, fulva, minus dense vestitus; prothorace longitudine parum latiore, trapezoideo, æqualiter punctato, disco antice sub-biimpresso, angulis posticis acute dentatis*; elytris depressis, ultra medium parallelis, punctato-striatis, basi granulatis.—Long. 14, lat. 4 millim."

*Hab.* Mexico[1].

Dr. Candèze has kindly forwarded his type (♀) of this species for examination. Amongst the Central-American species, *L. rubicundus* most nearly resembles *L. meridanus*, from which it may be known by its more depressed form, the somewhat trapezoidal thorax, the rather coarsely punctate-striate elytra, the structure of the sterna, &c. The prosternal process is gradually declivous behind the coxæ; the intercoxal portion of the mesosternum is **V**-shaped and declivous; the third joint of the antennæ is short, a little longer than the second, the two together as long as the fourth. The diagnosis is insufficient for the purposes of identification.

* Evidently a mistake for "carinatis."

### 9. **Ludius depressus.** (Tab. XXII. figg. 9, ♂; 9 *a*, antenna.)

Very elongate, narrow, depressed, shining; brown, the antennæ and legs brownish-testaceous; somewhat thickly clothed with short, decumbent, yellowish-cinereous pubescence. Head closely, rather coarsely punctate; antennæ slender, more than half the length of the body, joint 3 a little longer than 2, the two together shorter than 4, 4–11 moderately serrate, 11 appendiculate. Prothorax slightly broader than long, narrowed in front, sinuate at the sides behind, somewhat abruptly declivous towards the base, the marginal carina visible from above to near the apex; the hind angles long and narrow, divergent, carinate; the surface coarsely, closely punctate, the punctuation becoming denser and umbilicate towards the sides, obsoletely canaliculate along the median third of the disc. Elytra rather more than three and one-half times the length of, and fully as wide as, the prothorax, parallel to the middle, and gradually narrowing thence to the apex, the apices separately rounded; very finely punctate-striate, the interstices flat and thickly, rugulosely punctate, subgranulate at the base. Beneath closely, finely punctate; prosternal process very gradually declivous behind the coxæ; intercoxal portion of the mesosternum depressed, gradually declivous, V-shaped; posterior coxal plates broadly widened in their inner third, rounded opposite the insertion of the femora.

Length 13, breadth $3\frac{1}{3}$ millim. (♂.)

*Hab.* COSTA RICA, Volcan de Irazu 6000 feet (*Rogers*).

One specimen. The depressed, subparallel shape of this insect gives it a very different facies from the typical *Ludii*, but it possesses all the structural characters of the genus. Dr. Candèze has examined the specimen, and he suggests an affinity with *Probothrium*; it cannot, however, be included in that genus on account of the depressed mesosternum.

### 10. **Ludius physorhinus.** (Tab. XXII. fig. 10, prosternal process.)

*Probothrium physorhinus,* Cand. Monogr. Elat. iv. p. 290[1].

*Hab.* MEXICO, Cordova (*Sallé*[1]); GUATEMALA, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

I have seen eight specimens of this species, including the type (♂); four of these, including both sexes, are from Chiriqui. The females have the thorax broader than the elytra, in this respect approaching the Amazonian *P. amplicollis*, Cand. The intercoxal portion of the mesosternum is much less abruptly declivous than in the typical species of *Probothrium*, and the insect seems to me to be best placed in *Ludius*. The prosternal process is declivous behind the coxæ and concave between them. The punctures of the elytral striæ are distinct from those of the interstices—coarse in some specimens, and fine in others (irrespective of sex), the striæ themselves being very shallow. The third joint of the antennæ is a little longer than the second.

### 11. **Ludius setosus.** (Tab. XXII. figg. 11, ♂; 11 *a*, antenna; 11 *b*, prosternal process*.)

*Aphanobius setosus,* Germ. Zeitschr. für Ent. v. p. 183[1].

*Probothrium setosum,* Cand. Monogr. Elat. iv. p. 294[2].

*Ludius innoxius,* Chevr. in coll. Sallé (? *Aphanobius innoxius,* Dej. Cat. 3rd edit. p. 104)[3].

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* The number 11 *b* has been accidentally omitted in the lettering of the Plate.

Moderately elongate, broad, robust, slightly shining; brownish-castaneous, pitchy-brown or piceous, the antennæ and legs brownish or ferruginous; above and beneath somewhat thickly clothed with short, decumbent, fulvo-cinereous pubescence. Head coarsely, closely punctate; antennæ extending to considerably beyond the hind angles of the prothorax, and broadly and acutely serrate from the fourth joint, in the male, shorter and less acutely serrate in the female, joint 3 very short, slightly longer and stouter than 2, the two together much shorter than 4, 11 appendiculate. Prothorax convex, a little broader than long, the sides subparallel from near the base to about the middle, and rounded and converging in front, the anterior portion of the marginal carina not visible from above; the hind angles long and slightly divergent, sharply, obliquely carinate; the surface coarsely and rather closely punctate, the punctuation coarser and very sparse on the basal declivity, canaliculate behind. Elytra two and two-thirds longer than the prothorax, a little rounded at the sides, rapidly narrowing from about the basal third, attenuate at the apex, the sutural angles rather sharp; finely punctate-striate, the interstices flat and somewhat thickly, rugulosely punctate. Beneath thickly and finely, the prosternum coarsely and sparsely, punctate; intercoxal portion of the prosternum flat, the process moderately long, abruptly and perpendicularly declivous a short distance behind the coxæ, and horizontally extended thence to the acute tooth before the tip, the upper basal portion short and triangular; intercoxal portion of the mesosternum **V**-shaped, tuberculate or angularly raised on either side anteriorly; posterior coxal plates broadly and abruptly widened in their inner third.

*Var.* Rufo-castaneous, the legs and antennæ flavo-ferruginous.

Length 17–20, breadth 5–6 millim. (♂ ♀.)

*Hab.* MEXICO, Ventanas in Durango (*Höge*), Chiapas (*Sallé*), Yucatan (*Pilate, in coll. Janson*), Temax in North Yucatan (*Gaumer*); HONDURAS (*Mus. Brit.*); GUATEMALA (*coll. Janson*), Escuintla (*Conradt*); PANAMA, Volcan de Chiriqui (*Champion*). — COLOMBIA[1 2]; VENEZUELA.

Of this species we have received eight specimens from within our limits, all males but one, the latter being from Chiriqui. The variety is represented by a single example from Escuintla. The type (♂) is contained in the Janson collection, and Candèze's description was made from it. The form of the mesosternum is very different from that of *Probothrium pubescens*, *P. velutinum*, &c., and the insect is much better placed in *Ludius*. The single (♂) example from Durango is smaller and less robust than the others, and has the prosternum more closely punctured. *L. setosus* closely resembles *L. texanus*, Lec., and the North-American insect incorrectly identified by Leconte and Candèze with *L. hepaticus* (Germ.)*, from both of which it may be immediately separated by the form of the prosternal process: viewed in profile, this piece (instead of very gradually sloping downwards behind the coxæ to the ante-apical tooth, as in the N.-American insects) is abruptly and perpendicularly declivous a little behind the coxæ, and horizontally extended thence to the ante-apical tooth†. The specimens of *L. hepaticus* from Mexico and Guatemala, mentioned by Candèze (Monogr. Elat. iv. p. 307), one of which is contained in the Janson collection, belong here. A male from Yucatan is figured.

* *L. hepaticus* (Germ.), from Brazil, the types of which are contained in the Janson collection, is a *Probothrium*, very nearly allied to *P. rufivellum*, Cand. Apart from the nearly vertical intercoxal portion of the mesosternum, it may be known from the North-American species, and *L. setosus* also, by the acutely, triangularly dilated posterior coxal plates, the more coarsely punctured elytral striæ, the more attenuate elytra, &c.

† Specimens of a species very closely allied to this, labelled "California," are mixed with the series of

### 12. **Ludius meridanus.**

*Aphanobius meridanus*, Pilate, in litt.

Moderately elongate, broad, the male narrower, robust, slightly shining; rufo- or piceo-castaneous, the antennæ and legs ferruginous or flavo-ferruginous; above and beneath rather sparsely clothed with short, decumbent, yellowish-brown pubescence. Head closely, coarsely punctate, slightly depressed along the middle of the front in the male; antennæ extending to considerably beyond the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth moderately dilated and serrate, 3 short, slightly longer than 2, the two together in the male shorter than 4, 11 appendiculate. Prothorax convex, a little broader than long, more transverse in the female, the sides almost straight, and very gradually converging to near the apex, and rounded in front, in the male, more rounded in the female, the anterior portion of the marginal carina not visible from above; the hind angles long, not divergent, sharply, obliquely carrinate; the surface thickly, coarsely punctate, canaliculate behind. Elytra nearly three times the length of the prothorax, a little rounded at the sides, narrowing from about the middle, the apices narrow and conjointly rounded; finely punctate-striate, the interstices almost flat, rugulose, and thickly punctured, slightly granulate towards the base in the male. Beneath finely and rather sparsely, the prosternum very coarsely, punctate; intercoxal portion of the prosternum flat, the process abruptly, perpendicularly declivous a little behind the coxæ, and horizontally extended thence to the ante-apical tooth; intercoxal portion of the mesosternum **V**-shaped, angularly raised on either side anteriorly; posterior coxal plates moderately widened in their inner third.

Length 14–17½, breadth 4⅛–5¼ millim. (♂ ♀.)

*Hab.* Mexico, Yucatan (*Pilate, in coll. Janson*).

One pair, the female being very much larger and broader than the male; the latter is labelled with the name I have adopted. In the sternal characters this species agrees with *L. setosus*, from which it differs in the less dilated antennæ in both sexes, the joints being much less acutely serrate in the male; it is also less elongate than that insect, and the female has more parallel elytra. More convex than *L. rubicundus*, Cand., the prosternal process differently formed, the elytra more finely punctate-striate, &c.

## ORTHOSTETHUS.

*Aphanobius*, Germar, Zeitschr. für Ent. v. p. 183 (1844) (part.); Leconte, Trans. Am. Phil. Soc. new ser. x. p. 492 (nec Eschscholtz).

*Orthostethus*, Lacordaire, Gen. Col. iv. p. 207 (1857); Candèze, Monogr. Elat. iv. p. 313.

An American genus containing a few species of large size, all of which occur within

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*L. texanus* in the Janson collection. As this insect is certain to be confused with *L. setosus*, it is advisable to point out the differences, and propose a name for the species.

**Ludius peninsularis**, sp. n.

Closely allied to *L. setosus*, and differing as follows:—The third joint of the antennæ relatively longer, in some specimens twice as long as the second, the two together much shorter than 4; the elytra more flattened on the disc posteriorly; the intercoxal portion of the prosternum concave, the process abruptly and perpendicularly declivous at a little before the middle (forming an acute tooth, if viewed in profile), and horizontally extended thence to the ante-apical tooth. Length 16–18 millim. (♂ ♀.)

Dr. Horn informs me that he possesses examples of this species from Cape San Lucas, Lower California, one of which he has kindly forwarded; it is probable that those in the Janson collection are from the same region.

our limits. The two now added differ considerably from the known forms, one being almost glabrous, and the other having an excavate front. These insects are found in rotten wood or under bark.

*a*. Front flattened or feebly convex.
  *a'*. Body moderately convex; punctuation close, that of the prothorax coarse.
    *a''*. Body brown or brownish-black; pubescence fulvo- or flavo-cinereous, conspicuous.
      *a'''*. Prothorax as long as broad, the sides subparallel at their median third in both sexes . . . . . *infuscatus.*
      *b'''*. Prothorax broader than long, trapezoidal in the male, rounded at the sides in the female . . . . . *piceus.*
    *b''*. Body black; pubescence very sparse and partaking of the ground-colour; prothorax trapezoidal in the male, rounded at the sides in the female . . *corvinus.*
  *b'*. Body flattened above, almost glabrous, deep black, highly polished, and very sparsely, minutely punctate . . . . . *glabratus.*
*b*. Front concave; body moderately convex, brownish-castaneous or blackish-brown; pubescence fulvo- or yellowish-cinereous, conspicuous.
  *c'*. Antennæ serrate in the male . . . . . *cavifrons.*
  *d'*. Antennæ pectinate in the male . . . . . *pectinicornis.*

## 1. Orthostethus infuscatus.

*Aphanobius infuscatus*, Germ. Zeitschr. für Ent. v. p. 183[1]; Lec. Trans. Am. Phil. Soc. new ser. x. p. 492[2].
*Orthostethus infuscatus*, Lacord. Gen. Col. iv. p. 207[3]; Cand. Monogr. Elat. iv. p. 314[4].
*Pristilophus sordidus*, Melsh. Proc. Acad. Phil. ii. p. 216[5].
♀. *Orthostethus præfectus*, Cand. Monogr. Elat. iv. p. 315[6].

*Hab.* North America[1], Southern States[2 4], Alabama[5].—Mexico[1 4], Cordova, Tuxtla, Santecomapan (*Sallé*); British Honduras (*coll. Janson*); Guatemala, San Juan in Vera Paz, El Tumbador, Las Mercedes, San Isidro, Volcan de Atitlan, Zapote (*Champion*), El Rincon in San Marcos (*Richardson*), Panzos, Escuintla (*Conradt*); Nicaragua, Chontales (*Belt*, *E. M. Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Brazil[6].

Widely distributed in Tropical America, extending northwards into the Southern United States. *O. præfectus*, of which I have four specimens before me (three determined by Candèze himself), is based upon large females of this species, the Brazilian examples being inseparable from others of the same size and sex from North America. The thorax is as long as broad in both sexes, with the sides subparallel in the male, more rounded anteriorly in the female.

### 2. **Orthostethus piceus.** (Tab. XXII. figg. 13, ♀; 13 *a*, genitalia.)

*Orthostethus piceus*, Cand. Monogr. Elat. iv. p. 315, t. 4. figg. 10, 10 *a*, *b* [1].

*Hab.* Mexico, Cordova (*Sallé* [1]); British Honduras (*coll. Janson*); Guatemala, Capetillo (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

I have seen eleven examples of this species, five of which are from Chiriqui, including both sexes. The males have the thorax rapidly narrowing from the base, the sides being rounded in the females. The shorter and less parallel thorax distinguishes it from either sex of *O. infuscatus*; the elytra are less acuminate than in that species, this being especially noticeable in the females. A specimen from Chiriqui is figured.

### 3. **Orthostethus corvinus.** (Tab. XXII. figg. 12, ♂; 12 *a*, genitalia.)

*Aphanobius corvinus*, Germ. Zeitschr. für Ent. v. p. 183 [1].

*Orthostethus corvinus*, Lacord. Gen. iv. p. 207, nota [2]; Cand. Monogr. iv. p. 316 [3]; Steinh. Col. Hefte, xiv. p. 133 [4].

*Hab.* Mexico (*Sallé*); Guatemala (*coll. Janson*), Santa Cruz and San Gerónimo in Vera Paz, Totonicapam 10,000 feet, Quiché Mts. 7000 to 9000 feet, Cerro Zunil (*Champion*), Tecpan (*Conradt*); Nicaragua, Chontales (*Belt*, *E. M. Janson*); Costa Rica (*coll. Janson*).—Colombia [1–4].

Not uncommon in the mountainous districts of Central America, all the specimens captured by myself having been found at elevations of 4000 feet and upwards. Germar's type is a female (not a male, as Candèze supposed); the males are very much smaller, and they have the thorax much less rounded at the sides and rapidly converging from the base, and the antennæ more elongate. *O. corvinus* may be easily distinguished from its allies by its deep black colour and the very sparse, fine, blackish pubescence. The specimens before me vary from 18–35 millim. in length, and from 5–9 millim. in breadth. An example from Cerro Zunil is figured.

### 4. **Orthostethus glabratus.** (Tab. XXII. fig. 15, ♀.)

Elongate, broad, flattened above, very shining, deep black, almost glabrous, the head, the apex of the elytra, and the under surface with a few very fine, short, blackish hairs. Head moderately convex, sparsely, finely punctate; antennæ short, not nearly reaching the hind angles of the prothorax, the joints from the fourth dilated and strongly serrate, 3 as long as 4. Prothorax as long as broad, gradually narrowing from the base forwards, the sides rounded in front and feebly sinuate towards the base and apex; the hind angles long, stout, and divergent, slightly incurved at the tip, strongly carinate; the surface with widely scattered fine punctures, which become very minute on the basal half of the disc, a small space down the middle behind impunctate. Elytra three times the length of the prothorax, rapidly narrowing from a little below the base, the base broadly depressed near the shoulders, the apices slightly dehiscent, the sutural angles mucronate; sparsely, minutely punctate, without trace of striæ. Beneath very sparsely punctate, the punctures coarse on the prosternum, those on the other parts excessively fine; prosternal process very long and stout; mesosternum with the sides of the cavity much thickened and greatly raised,

horizontal, **V**-shaped; metasternum broad between the middle coxæ, gradually raised forwards to meet the protuberant mesosternum, concave along the median line.

Length 29, breadth $7\frac{4}{5}$ millim. (♀.)

*Hab.* MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

One example only of this interesting novelty has been received. Allied to *O. corvinus*, but differing from it in the almost glabrous, highly polished, and flattened upper surface, the very sparse, minute punctuation, the longer thorax, and the greatly developed mesosternum. In this last-mentioned character it differs from all the other species of the genus. *O. glabratus* somewhat resembles the North-American *Melanactes piceus*, De Geer, but differs from that insect in having double, widely separated prosternal sutures, strongly triangularly dilated posterior coxal plates, &c., as well as in its much more elongate shape.

### 5. **Orthostethus cavifrons.** (Tab. XXII. fig. 14, ♂.)

Elongate, robust, moderately shining; obscure brownish-castaneous, the prothorax with a large indeterminate patch on the disc, widening anteriorly, piceous or pitchy-black; above and beneath thickly clothed with short, decumbent, fulvo-cinereous hairs. Head very broadly excavate along the middle (the sides of the front appearing raised), coarsely, closely punctate, the eyes very large; antennæ about reaching the hind angles of the prothorax in the male, shorter in the female, the joints from the fourth dilated and strongly serrate, 3 slightly shorter than 4. Prothorax a little longer than broad, with the sides subparallel or very gradually converging in their median third, rounded in front, and feebly sinuate behind; the hind angles very long and strongly divergent, slightly incurved at the tip, and finely carinate; the surface thickly, coarsely punctate, the punctuation becoming coarser, denser, and umbilicate at the sides in front, and sparser along the middle of the disc, down the centre of which is an indistinct smooth line. Elytra three times the length of the prothorax, rapidly narrowing from a little below the base, attenuate at the apex, the sutural angles sharply mucronate; closely, finely, rugulosely punctate, and with indications of faint, longitudinal furrows. Beneath closely and finely, the prosternum coarsely and sparsely, punctured; mesosternum raised, horizontal, **V**-shaped.

Length $23\frac{1}{2}$–28, breadth $6\frac{1}{2}$–$7\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Seven examples. Closely allied to *O. infuscatus*, but differing from that insect in the broadly excavate front in both sexes; it is of the size of the smallest specimens of that species. The frontal excavation is very broad, and extends backwards to the vertex.

### 6. **Orthostethus pectinicornis.** (Tab. XXII. figg. 16, ♂; 16 *a*, antenna.)

♂. Very elongate, broad, shining; black, the elytra brownish-black, the under surface pitchy-brown; somewhat thickly clothed with short, fine, yellowish-cinereous pubescence. Head closely, coarsely punctate, broadly excavate in front; antennæ extending to far beyond the hind angles of the prothorax, joints 2 and 3 very short, subequal, 4 about three times the length of 3, 4–11 pectinate. Prothorax convex, nearly as long as broad, trapezoidal, the sides a little rounded in front; the hind angles long, incurved at the tip, sharply carinate; the surface closely, coarsely punctate, the punctuation more scattered on the disc, down the median third of which is a smooth space. Elytra about three and one-fifth times the length of the prothorax, and distinctly wider than it, gradually narrowing from the middle, and conjointly rounded at the apex, the sutural angles sharp; closely, confusedly punctate, without trace of striæ.

Beneath thickly and finely, the prosternum coarsely and sparsely, punctured; mesosternum subhorizontal, moderately raised, V-shaped.

Length $23\frac{1}{2}$, breadth $6\frac{1}{2}$ millim.

*Hab.* Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

One worn example only of this peculiar species has been received. Differs from all the other known members of the genus in the pectinate antennæ in the male; it also has the sides of the mesosternum only moderately raised, and the elytra more parellel than usual. The excavation of the front does not extend to the vertex, as in *O. cavifrons*.

## Group **AGRIOTINI.**

### AGRIOTES.

*Agriotes*, Eschscholtz, in Thon's Archiv, ii. 1, p. 34 (1829); Candèze, Monogr. Elat. iv. p. 358; Leconte, Trans. Am. Ent. Soc. xii. p. 15 (1884).
*Ectinus*, Eschscholtz, loc. cit. (part.).
*Cataphagus*, Stephens, Ill. Brit. Ent., Mandib. iii. p. 185.

This well-known genus contains about 120 described species, two-thirds of which are from the Old World. Eighteen inhabit America north of Mexico, and a similar number have been recorded from our region, whence many other species are now added, chiefly from Mexico or Guatemala. *Agriotes* is apparently replaced in South America and the Antilles* by *Cosmesus*, under which name Candèze has included various heterogeneous forms†, and other allied genera. The Central-American species—many of which are more brightly coloured than their northern allies, or have more definite markings—are very local, few of them being common even to Mexico and Guatemala. They all belong to Candèze's Section I. (A), in which the hind coxal plates are very little widened inwards. Many of them are variable in colour (*A. insolitus* and others differing sexually in this respect), or vary in the colour of the pubescence, the latter sometimes being so arranged as to form spots on the thorax, or lines or vittæ upon the elytra. *A. hirsutus* differs from all the others in the semierect pubescence of the upper surface. These insects are chiefly found at the roots of grass or low plants, often upon the sandy banks of streams; in sunny weather they may frequently be beaten from herbage.

The following key is added to assist in the identification of the Central-American forms; but as the chief characters upon which it is based gradually merge one into the other, and are in some cases subject to variation in the same species, it must be used with caution.

* *Agriotes australis*, Fairm., from Punta Arenas, evidently belongs to a different genus; *A. guadulpensis*, Cand., from Guadeloupe I., is probably a *Dolopius*.

† Some of the species of his Section II., such as the Colombian *C. maurus* and *C. brevis*, Cand., can hardly be retained in it.

*a*. Antennæ with the third joint as long as, or longer than, the second.
*a'*. Hind angles of the prothorax carinate *.
*a''*. Marginal carina of the prothorax entire †.
*a'''*. Prothorax more or less elongate, considerably longer than broad.
*a*⁴. Prothorax rather sparsely, uniformly pubescent; elytra with lines or stripes of paler pubescence.
*a*⁵. Elytra with more or less distinct alternate lines of light and dark pubescence.
*a*⁶. Prothorax rufous, with deep basal incisures and long, acute hind angles; punctuation sparse . . . . . *sublineatus.*
*b*⁶. Prothorax black, feebly incised at the base, and with shorter hind angles; punctuation close . . . . . *lineipennis.*
*b*⁵. Elytra with the suture and a narrow submarginal vitta cinereo-pubescent; not vittate . . . . . *hilaris.*
*c*⁵. Elytra with the suture and a broad discoidal vitta yellowish-cinereous pubescent; vittate . . . . . *virgatus.*
*b*⁴. Prothorax thickly pubescent, with two large blackish-pubescent marks on the anterior part of the disc ‡; the elytra with the suture and a submarginal vitta cinereo- or yellowish-pubescent . *pulcherrimus.*
*c*⁴. Prothorax and elytra densely, uniformly pubescent (the elytra sometimes with a narrow darker vitta on the disc in *A. fulvescens*).
*d*⁵. Elytra moderately elongate.
*c*⁶. Elytra rather coarsely punctate-striate . . . . . *fulvescens.*
*d*⁶. Elytra very finely punctate-striate . . . . . *castaneipennis.*
*e*⁵. Elytra very elongate . . . . . *pexus.*
*d*⁴. Prothorax densely pubescent, with two broad black vittæ on the disc clothed with fuscous or blackish hairs; the elytra with the suture and a narrow submarginal stripe cinereo-pubescent . . . *tæniatus.*
*e*⁴. Prothorax and elytra rather sparsely, uniformly pubescent.
*f*⁵. Black, the metasternum and abdomen ferruginous . . . . . *bicolor.*
*g*⁵. Black, the prothorax and propleuræ rufous; the pubescence above and beneath partaking of the ground-colour . . . . *miniatocollis.*
*h*⁵. Black, the prothorax and propleuræ sometimes obscure rufous; the pubescence of the under surface yellowish-white . . . . *pectoralis.*
*b'''*. Prothorax transverse or not longer than broad (slightly longer in *A. binotatus*).
*f*⁴. Body fusiform.
*i*⁵. Elytra not vittate, uniformly pubescent; hind angles of the prothorax very long, acute, and divergent . . . . . *acutus.*

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* Very finely or indistinctly in *A. fulvescens*, *A. tæniatus*, *A. amabilis*, *A. scapularis*, *A. quadrivittatus*, and *A. trilineatus*.

† Interrupted at the middle in some specimens of *A. hilaris*, *A. pulcherrimus*, *A. fulvescens*, *A. pexus*, *A. tæniatus*, and *A. amabilis*.

‡ Indistinct in var. *β*.

$j^5$. Elytra vittate (except in *A. lateralis*, var.); hind angles of the prothorax less produced.

$e^6$. Prothorax usually with a black median vitta or spot, uniformly pubescent . . . . . *lateralis.*

$f^6$. Prothorax with two curved vittæ on the disc, which are clothed with darker pubescence . . . . . *trivittatus.*

$g^4$. Body oblong-oval or subfusiform; elytra rather short, with the suture and a submarginal vitta, or the suture only, cinereo-pubescent.

$k^5$. Hind angles of the prothorax moderately produced, not divergent; prothorax black, or rufous with a black discoidal patch; elytra usually vittate . . . . . *notatus.*

$l^5$. Hind angles of the prothorax longer and divergent.

$g^6$. Prothorax (in typical form) flavo-ferruginous, with a black patch in front, the latter narrowing posteriorly.

$a^7$. Elytra not vittate, the suture cinereo-pubescent; hind angles of the prothorax very long and strongly divergent, slightly incurved at the tip . . . . . *amabilis.*

$b^7$. Elytra (in typical form) vittate, the suture and a submarginal vitta cinereo-pubescent; hind angles of the prothorax more acute and moderately divergent . . . . . *scapularis.*

$h^6$. Prothorax (in typical form) flavo-ferruginous, with a transverse black patch or two spots before the middle; elytra comparatively short and attenuate, usually vittate . . . . *quadrivittatus.*

$i^6$. Prothorax rufo-ferruginous, with an indistinct darker patch on the disc formed by brownish hairs; elytra narrower and more parallel . . . . . *trilineatus.*

$h^4$. Body elongate, brown; elytra long, uniformly pubescent; prothorax with two indistinct darker marks on the disc . . . . . *binotatus.*

$b''$. Marginal carina of the prothorax partly interrupted or incomplete; elytra elongate; body unicolorous, brown.

$c'''$. Prothorax longer than broad.

$i^4$. Basal incisures deep; punctuation sparse and fine . . . . . *vaccinus.*

$j^4$. Basal incisures shallow; punctuation closer and coarser . . . . *longipennis.*

$d'''$. Prothorax transverse . . . . . *curticollis.*

$b'$. Hind angles of the prothorax not carinate.

$c''$. Marginal carina of the prothorax entire; prothorax transverse or about as long as broad.

$e'''$. Prothorax very densely punctured; elytra sometimes with the suture and sides clothed with paler pubescence: body moderately broad, the elytra rather short . . . . . *quadraticollis.*

$f'''$. Prothorax more sparsely punctured; elytra with the suture and sides clothed with paler pubescence: body narrow, the elytra rather short. *cinereiventris.*

$g'''$. Prothorax sparsely and finely punctured.

$k^4$. Elytra (♂) with the suture and sides clothed with paler pubescence, submetallic in some specimens: length about 6–7½ millim. *insolitus.*

*l*⁴. Elytra (in typical form) with alternate lines of light and dark pubescence: length 5–6 millim. . . . . *alternus.*

*d*‴. Marginal carina of the prothorax incomplete or interrupted.

*h*‴. Pubescence of the upper surface decumbent.

*m*⁴. Prothorax very elongate, much longer than broad; second and fourth elytral interstices with a line of darker pubescence . . . *quadrilineatus.*

*n*⁴. Prothorax about as long as or a little longer than broad.

*m*⁵. Elytra elongate.

*j*⁶. Prothorax testaceous, with a black cruciform patch; elytra usually with the suture and a submarginal stripe of paler pubescence . . . . . *cruciatus.*

*k*⁶. Prothorax unicolorous or without definite markings, moderately closely punctured: pubescence uniform.

*c*⁷. Basal incisures of the prothorax deep: body moderately broad . . . . . *incallidus.*

*d*⁷. Basal incisures of the prothorax shallow: body narrow . . *monticola.*

*n*⁵. Elytra moderately elongate or rather short.

*l*⁶. Elytral pubescence not paler along the suture and at the sides.

*e*⁷. Prothorax closely and rather finely punctured . . . . . *mexicanus.*

*f*⁷. Prothorax densely and more coarsely punctured . . . . *guatemalensis.*

*m*⁶. Elytral pubescence usually paler along the suture and at the sides; prothorax dull, very densely punctured; elytra attenuate . . . . . *opacicollis.*

*i*‴. Pubescence of the upper surface semierect . . . . . *hirsutus.*

*b*. Antennæ with the third joint slightly shorter than the second; hind angles of the prothorax not carinate.

*c*′. Body oblong- or elongate-oval; pubescence moderately close; prothorax densely punctured, with the hind angles divergent and the marginal carina usually interrupted; elytra with the suture and sides clothed with paler pubescence.

*e*″. Elytral interstices not rougher at the base . . . . . *mixtus.*

*f*″. Elytral interstices rougher at the base . . . . . *pauxillus.*

*d*′. Body narrow, subparallel, brown; pubescence sparse and uniform; prothorax with the hind angles not divergent and the marginal carina obliterated anteriorly: length $5\frac{1}{2}$ millim. . . . . *angustatus.*

### 1. **Agriotes sublineatus.** (Tab. XXII. fig. 17.)

Elongate, convex, shining; black, the prothorax and propleuræ obscure rufous; the head and prothorax sparsely, and the scutellum, elytra, and under surface thickly, pubescent, the pubescence yellowish-cinereous, that on the outer alternate elytral interstices blackish, the second and fourth interstices to the middle, and the third also for some distance, with blackish pubescence. Head rather sparsely, finely punctate; antennæ not quite reaching the hind angles of the prothorax, joint 3 longer than 2, as long as, but narrower than, 4. Prothorax considerably longer than broad, rounded at the sides, the latter converging in front and sinuate behind; the hind angles long, stout, acute, and divergent, sharply carinate; the surface sparsely, finely punctate, deeply canaliculate behind, and with a smooth median line; the base with a short deep incisure on either side; the marginal carina distinct throughout.

Elytra two and three-fourths the length of the prothorax, slightly rounded at the sides, narrowing from a little below the base, the apices narrow; finely and shallowly punctate-striate, the striæ deeply impressed on the basal declivity, the interstices flat and closely, finely punctate. Beneath densely, the prosternum and propleuræ rather sparsely, punctured. Hind coxal plates a little widened in their inner third.
Length 11½, breadth 3 millim.

*Hab.* Costa Rica (*Van Patten*).

One example, probably a female. Larger and more elongate than *A. hilaris*; the third joint of the antennæ longer; the elytra more attenuate, more shallowly striate, and with alternate lines of light and dark pubescence, these becoming well defined towards the sides; the thorax more sparsely punctured, more deeply canaliculate behind, and with much more sharply carinate hind angles. From *A. lineipennis*, which has somewhat similarly-coloured elytral pubescence, the present insect may be known by the long, acute, divergent hind angles of the thorax, the surface of which is much more sparsely punctured, and the more acuminate elytra.

2. **Agriotes lineipennis.** (Tab. XXII. figg. 18, ♂; 18 *a*, antenna.)

*Agriotes lineipennis*, Cand. Monogr. Elat. iv. p. 371[1].

*Hab.* Mexico (*coll. Janson, ex Laferté* [1]).

Unique in the Laferté collection. Closely allied to *A. bicolor*, but differing from it in the relatively longer third joint of the antennæ, and the much more densely punctured thorax, which is also less deeply canaliculate behind, and has the base less deeply incised; also in having blackish-brown pubescence on the alternate interstices of the elytra, that on the rest of the surface being yellowish. The third joint of the antennæ is as long as, but narrower than, the fourth.

3. **Agriotes hilaris.** (Tab. XXII. fig. 19.)

*Agriotes hilaris*, Cand. Monogr. Elat. iv. p. 369[1].

*Hab.* Mexico (*coll. Janson, ex Laferté* [1]), Tepansacualco in Oaxaca (*Sallé*); Guatemala, Purula in Vera Paz (*Champion*).

Found in plenty at Purula. Varies in colour from black to brown; the thorax is rufous in the Mexican specimens, but in many of those from Purula, where also the typical form occurred, it has a large black patch on the disc, or is entirely black. The elytra have the suture and a narrow line on the outer part of the disc—sometimes abbreviated or obsolete—whitish-pubescent, the pubescence on the other parts being fuscous or blackish-brown. The pubescence on the under surface is cinereous or yellowish-cinereous. Some of the Guatemalan examples have the thorax a little more elongate and more coarsely punctured than the Mexican types.

A Mexican specimen is figured.

### 4. **Agriotes virgatus.** (Tab. XXII. fig. 20, var.)

*Agriotes virgatus*, Cand. Monogr. Elat. iv. p. 368 [1].

*Hab.* Mexico, Toxpam, Cordova, and Santecomapan in Vera Cruz, Oaxaca (*Sallé* [1]), Almolonga, Juquila (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*).

Not uncommon in Mexico, whence we have received a long series. The form with the thorax rufous or flavo-ferruginous (var. *b* of Candèze) is much more abundant than the type. *A. virgatus* may be known from most of its allies by the long, oblique, broad, yellowish vitta on each elytron, the vittæ and the suture being clothed with pallid pubescence; the thorax is longer than broad. A specimen of the var. *b* from Cordova is figured.

### 5. **Agriotes pulcherrimus.** (Tab. XXII. figg. 21, ♂; 22, var. *ligatus*; 23, var. β.)

*Agriotes pulcherrimus*, Cand. Monogr. Elat. iv. p. 364 [1].

*Hab.* Mexico, Volcan de San Martin [1], Tuxtla, Juquila (*Sallé*), Almolonga, Cordova (*Höge*); Guatemala, Purula in Vera Paz (*Champion*).

Var. *α*. The sutural and discoidal stripes of yellowish-cinereous pubescence narrower and more sharply defined. (Fig. 23.)

*Agriotes ligatus*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. cxciii (Elat. Nouv. ii. p. 48) [2].

*Hab.* Mexico (*coll. Janson*); Guatemala [2] (*Sallé; coll. Janson*).

Var. β. The prothorax obscure rufous or black, with the two fusco-pubescent marks coalescent and extending downwards on the middle of the disc so as to form a subcruciform patch; the submarginal cinereo-pubescent elytral vittæ narrow and confluent before the apex. (Fig. 23.)

*Hab.* Guatemala, Coban in Vera Paz (*Conradt*).

With a long series of specimens it is not possible to separate *A. ligatus* from *A. pulcherrimus*, the two insects differing only in the relative width of the stripes of pallid pubescence on the elytra. In the numerous examples from Purula, as well as in some of those from Mexico, these stripes are even broader than in the type (♂) of *A. pulcherrimus*; and in one of the two specimens from Tuxtla they are very little wider than in *A. ligatus*. The insect varies in colour from black to brown. The thorax in some specimens is ferruginous, with a broad transverse black patch before the middle, which is divided along the centre and narrowed outwards, in others black or rufous; it is densely, finely punctate, with two large blackish-brown or fusco-pubescent spots before the middle, and the rest of the rather coarse dense pubescence yellow or yellowish-cinereous. The suture and a stripe on the outer part of the disc of the elytra are clothed with yellowish or whitish pubescence, the rest of the pubescence being fuscous or blackish-brown: in some specimens these stripes become so extended as to leave a very narrow fusco-pubescent space on the disc of each elytron. The pubescence on the under surface is entirely yellowish-cinereous. In the two

specimens of the var. β from Coban the marks on the thorax are united and form a subcruciform patch. We figure three specimens: the type of *A. pulcherrimus* from the Sallé collection; one of the types of the var. *ligatus* from the Candèze collection; and an example of the var. β from Coban.

### 6. **Agriotes fulvescens.**

*Agriotes fulvescens*, Cand. Monogr. Elat. iv. p. 365 [1].
*Agriotes cervinus*, Deyr. in coll. Sallé.

*Hab.* Mexico (*coll. Janson* [1]), Juquila (*Sallé*).

This insect is compared by Candèze with *A. pexus*, instead of with *A. pulcherrimus*, of which it is probably a variety with the fusco-pubescent spots on the thorax obliterated. In several of the specimens there is a fusco-pubescent stripe on the disc of each elytron, as wide as in some of the varieties of *A. pulcherrimus*. The thorax usually has a large black patch on the disc before the middle.

### 7. **Agriotes castaneipennis.** (Tab. XXII. fig. 24.)

Elongate, rather convex, shining; piceous, the elytra castaneous, the mouth-parts (the tips of the mandibles excepted) ferruginous, the basal joints of the antennæ and the legs testaceous; thickly pubescent, the pubescence fulvous above, paler at the sides of the prothorax behind, and pale greyish beneath, the hairs on the disc of the prothorax transversely combed inwards. Head densely, finely punctate; antennæ scarcely reaching the hind angles of the prothorax, joints 2 and 3 equal, 3 much shorter than 4. Prothorax much longer than broad, subcylindrical, the sides a little rounded and converging anteriorly and feebly sinuate behind; the hind angles rather stout, moderately long and slightly divergent, very finely carinate; the surface densely, finely punctate, deeply canaliculate behind, and with a narrow smooth space along the middle; the base with a short incisure on either side; the marginal carina entire. Elytra two and two-thirds the length of the prothorax, and equalling it in width, a little rounded at the sides, gradually narrowing from about the basal third, the apices rather narrow and conjointly rounded; very finely punctate-striate, the punctures somewhat widely separated and very little coarser than those of the interstices, the latter flat and thickly, minutely punctured. Beneath densely, finely punctate, the prosternum more sparsely punctured. Hind coxal plates a little widened in their inner third.
Length $11\frac{1}{4}$, breadth $2\frac{4}{5}$ millim.

*Hab.* Guatemala, Zapote (*Champion*).

One specimen. Less elongate and more parallel than *A. pexus*, the elytra much shorter and narrower, and very finely punctate-striate, the hind angles of the thorax feebly divergent, &c. From *A. fulvescens* it may be known by its less densely punctured and longer thorax, the hind angles of which are shorter, stouter, less acute, and scarcely divergent, and the median channel deeper, the narrower, very finely striate elytra, the more shining surface, &c.

### 8. **Agriotes pexus.** (Tab. XXII. fig. 25.)

*Agriotes pexus*, Cand. Monogr. Elat. iv. p. 365 [1].

*Hab.* Mexico, Jacale (*Sallé* [1]); Guatemala, Purula in Vera Paz (*Champion*).

I have seen seven specimens of this species—three from Mexico, including the

type ( ♂ ), and four from Guatemala. It is black, with the elytra flavo-ferruginous or castaneous. The pubescence is dense and rather coarse, fulvous or fulvo-cinereous above, in some specimens whiter at the base or hind angles of the thorax and on the scutellum, and cinereous or yellowish-cinereous beneath. The elytra are more elongate and more acuminate at the tip than in most of the allied forms; they are considerably wider than the thorax. The thoracic pubescence has the appearance of being transversely combed inwards on the disc. The type is figured.

9. **Agriotes tæniatus.** (Tab. XXII. fig. 26, ♂.)

*Agriotes tæniatus*, Cand. Monogr. Elat. iv. p. 364[1].

*Hab.* Mexico, Etla, Parada, Capulalpam, Yolos (*Sallé*), Oaxaca (*coll. Janson*), Cordova, Almolonga, Playa Vicente, Tapachula in Chiapas (*Höge*); Guatemala (*coll. Janson*[1]), Aceytuno (*Salvin*), Zapote (*Champion*).

Found in numbers by myself at Zapote. Mexican specimens are considerably larger than those from Guatemala, irrespective of sex. Easily distinguishable from its allies by the two broad black vittæ on the thorax, which in some specimens are almost coalescent, so as to form a large discoidal patch, the rest of the thorax and the margins of the propleuræ being rufous or ferruginous. The thorax is densely, rather coarsely punctate, with a smooth slightly raised median line; thickly pubescent, the pubescence on the rufous portion being yellowish-cinereous and that on the vittæ fuscous or blackish-brown. The elytra have the suture and a narrow line on the outer part of the disc clothed with whitish or yellowish-cinereous pubescence, that on the other parts being fuscous. The pubescence on the head and scutellum is whitish. The type is a small male. *A. tæniatus* is smaller and narrower than *A. pulcherrimus*, and has a differently coloured, more coarsely punctured thorax. A specimen from Cordova is figured.

10. **Agriotes bicolor.** (Tab. XXII. fig. 27.)

*Agriotes bicolor*, Cand. Monogr. Elat. iv. p. 370[1].

*Hab.* Mexico (*coll. Janson, ex Laferté*[1]).

The only specimens I have seen of this species are the two types in the Laferté collection. It is deep black in colour and shining, with the metasternum and abdomen rufo-ferruginous, and the legs and the basal joint of the antennæ testaceous; the pubescence is fine and rather sparse, yellowish-cinereous on the scutellum and partaking of the ground-colour on the rest of the surface. The basal incisures of the thorax are deep. This insect closely resembles the black forms of *Hemicrepidius instabilis*.

### 11. **Agriotes miniatocollis.** (Tab. XXII. fig. 28, ♂.)

*Agriotes miniatocollis,* Chevr. Coll. Mex. cent. ii. fasc. 8, no. 199 (1835) [1].
*Agriotes miniaticollis,* Cand. Monogr. Elat. iv. p. 369 [2].

*Hab.* Mexico [1 2], Orizaba (*Sallé*), Cerro de Plumas (*Höge*).

This species is black and shining, with the thorax and propleuræ rufous, the pubescence very fine and uniform, and partaking of the ground-colour, that on the thorax sparse. The hind coxal plates are a little widened in their inner third.

### 12. **Agriotes pectoralis.**

Elongate, convex, shining; deep black, the prothorax, prosternum, and propleuræ (except at the base) obscure rufous in one example; the antennæ and legs black or brownish-black, the basal joint of the former pitchy-red; above somewhat thickly clothed with blackish pubescence; the metasternum and abdomen densely, and the prosternum and propleuræ sparsely, clothed with yellowish-white pubescence. Head finely, moderately closely punctate; antennæ reaching the hind angles of the prothorax, joints 2 and 3 subequal, 3 very little shorter than 4. Prothorax much longer than broad, subcylindrical, the sides moderately rounded and converging anteriorly, and sinuate behind; the hind angles long, stout, acute, and divergent, carinate; the surface closely, very finely punctate, canaliculate from the middle to the base, and with a smooth median line; the base with a short incisure on either side; the marginal carina distinct throughout. Elytra two and one-half times the length of the prothorax, slightly rounded at the sides, and narrowing from a little below the base, the apices narrow; finely and very shallowly punctate-striate, the striæ deeply impressed on the basal declivity, the interstices closely and very finely punctured. Beneath densely and finely, the prosternum and propleuræ more sparsely, punctate. Hind coxal plates very little widened inwards.

Length 10–10$\frac{1}{3}$, breadth 2$\frac{1}{2}$–2$\frac{3}{4}$ millim.

*Hab.* Guatemala, Capetillo (*Champion*).

Two examples, probably sexes, the example with the rufous thorax having slightly shorter antennæ than the black male. This insect can be compared only with *A. miniatocollis*, from which it may be at once separated by the dense yellowish white pubescence of the under surface, and the longer and more densely punctured thorax.

### 13. **Agriotes acutus.** (Tab. XXIII. fig. 1.)

Elongate, fusiform, convex, shining; black, brown, or yellowish-brown, the prothorax in pale specimens usually ferruginous or rufous, sometimes with the disc black in the middle (the black in one example extending to the base and apex), the antennæ brown, with the basal joint testaceous, the legs brown or testaceous; above rather sparsely clothed with yellowish-cinereous pubescence, the pubescence on the under surface denser and paler. Head closely, finely punctate; antennæ reaching the hind angles of the prothorax in the female, slightly longer in the male, joints 2 and 3 subequal in length, 3 very little shorter than 4. Prothorax broader than long, rounded at the sides, strongly narrowed in front and constricted behind; the hind angles long, narrow, acute, and divergent, carinate; the surface somewhat closely, moderately finely punctate, the punctuation becoming very sparse on the basal declivity, deeply canaliculate behind, and with a smooth median line; the marginal carina distinct throughout. Elytra three and one-half times the length of the prothorax, rounded at the sides, and rapidly narrowing from a little below the base, pointed behind, the apices acute and slightly dehiscent; punctate-striate, the interstices almost flat and very finely, rugulosely punctate. Beneath densely and minutely, the prosternum and propleuræ sparsely and much more coarsely, punctate. Hind coxal plates a little widened in their inner third.

Length 9–9$\frac{2}{3}$, breadth 2$\frac{1}{2}$–2$\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Nicaragua, Chontalès (*Belt*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Seven examples from Chiriqui and one from Chontales. Differs from most of the other Central-American species in its fusiform shape; the elytra are pointed behind; the thorax is transverse, strongly narrowed in front and constricted behind, with long, narrow, and acute hind angles. *A. acutus* is nearest allied to *A. lateralis*, but easily separable from it by the pointed elytra and the anteriorly narrowed thorax, the sides of which are more rounded in front and more constricted behind. The insect varies greatly in colour. In one specimen the thorax is black and the elytra are brown; in another the thorax is rufous and the elytra are black. A Chiriqui specimen is figured.

### 14. **Agriotes lateralis.** (Tab. XXIII. fig. 2.)

*Agriotes lateralis*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. cxciii (Elat. Nouv. ii. p. 48)[1].

*Hab.* Costa Rica[1]; Panama, Bugaba, Volcan de Chiriqui (*Champion*).

*Var.* α. Black, the elytra with the suture and a submarginal stripe cinereo-pubescent.

*Hab.* Costa Rica (*coll. Janson*).

Found in plenty in Chiriqui. This insect, in its vittate form, somewhat resembles *A. quadrivittatus*, except that the usual discoidal black patch on the thorax is oval or oblong (instead of transverse) and the elytra are considerably more elongate; the punctuation of the thorax and elytra is also less dense. The colour is variable: the thorax in some specimens is black, and in others ferruginous; the elytra in typical examples are piceous or fuscous, with a submarginal flavous vitta (this and the suture being clothed with yellowish-cinereous pubescence), sometimes entirely brownish testaceous or black. We are indebted to Dr. Candèze for one of his types. The variety α is represented by a single example (♂) in the Janson collection. A specimen from Bugaba is figured.

### 15. **Agriotes trivittatus.** (Tab. XXIII. fig. 3.)

Moderately elongate, fusiform, rather shining; black, the prothorax and propleuræ ferrugineo-testaceous, the prothorax with two curved brown or reddish-brown vittæ on the disc, the vittæ extending from the base to near the apex and narrowing in front and behind, the elytra with a rather broad testaceous vitta on the outer part of the disc extending from the shoulder to near the middle, the metasternum and abdomen brownish at the sides, the antennæ blackish-brown, with the basal one or two joints testaceous, the legs testaceous; thickly pubescent, the pubescence yellowish-cinereous on the head, prothorax, except on the dorsal vittæ, where it partakes of the ground-colour, scutellum, and under surface; the elytra with the suture and a sharply defined stripe on the outer part of the disc (covering the shorter vitta, narrowing behind, and extending to near the apex) clothed with yellowish-cinereous pubescence, that on the rest of their surface blackish-brown. Head densely, finely punctate; antennæ about reaching the hind angles of the prothorax, joints 2 and 3 equal in length, 3 slightly shorter than 4. Prothorax convex, slightly broader than long, rounded at the sides, the latter converging from the middle forwards, and slightly converging and feebly sinuate behind; the hind angles moderately long, not divergent, and very finely

carinate; the surface densely, finely punctate, canaliculate at the base, and with a smooth median line; the base with a distinct incisure on either side; the marginal carina distinct throughout. Elytra three times the length of the prothorax, and equalling it in width, flattened on the disc, a little rounded at the sides, and rapidly narrowing from about the basal third, pointed behind, the apices slightly acuminate; punctate-striate, the interstices somewhat convex, flat on the disc, and closely, rugulosely punctate. Beneath (including the propleuræ) densely, finely punctate, the prosternum with coarser and more scattered punctures. Hind coxal plates a little widened in their inner third.

Length $8\frac{1}{2}$–$9\frac{1}{8}$, breadth $2\frac{2}{5}$–$2\frac{1}{2}$ millim.

*Hab.* Nicaragua (*Sallé*), Chontales (*Belt*).

Two examples, one of which is a female. Amongst the species described by Candèze, the present one can only be compared with *A. tæniatus*, from which it differs in the narrower, curved, paler vittæ of the thorax, the thorax itself being much shorter and more rounded at the sides; the elytra, too, are flattened on the disc, more pointed behind, and have a well-defined submarginal testaceous vitta, which is covered by an attenuate stripe of pallid pubescence, the suture also being clothed with similarly-coloured pubescence throughout.

### 16. **Agriotes notatus.** (Tab. XXIII. fig. 4.)

*Agriotes notatus*, Cand. Monogr. Elat. iv. p. 367 [1].

*Hab.* Mexico [1] (*coll. Janson*), Cordova, Jalapa, Almolonga, Oaxaca (*Höge*).

I have seen eight specimens of this species, including three of the typical form, in which the thorax is rufous, with a large oval black patch on the disc, and the elytra have a submarginal testaceous vitta. In the varieties the thorax is black, sometimes with the base rufous on either side, and the elytral vittæ are indistinct or obsolete. The elytra in all the specimens seen, irrespective of colour, have the suture and a rather broad submarginal stripe cinereo-pubescent. *A. notatus* is longer and more parallel than *A. quadrivittatus*, and also differs from that species, and from *A. amabilis* also, in the shorter, more acute, and non-divergent hind angles of the thorax. In both sexes the thorax is rounded at the sides and widest at the middle, it being distinctly narrowed behind. A specimen from Oaxaca is figured.

### 17. **Agriotes amabilis.** (Tab. XXIII. figg. 5; 6, var.)

*Agriotes amabilis*, Cand. Monogr. Elat. iv. p. 366 (excl. var. *a*) [1].

*Hab.* Mexico [1] (*coll. Janson, ex Laferté*).

Var. *α*. The prothorax rufo-ferruginous, with a broad black median vitta, which is narrowed in front and behind; the elytra brown or black, fusco-pubescent, with the suture, and sometimes a short streak below the humeri, cinereo-pubescent.

*Hab.* Mexico (*coll. Janson*), Yolotepec and Yolos (*Sallé*).

Var. *β*. Fuscous or black, fusco-pubescent, the elytra with the suture very narrowly cinereo-pubescent.

*Agriotes ciocolatinus*, Cand. Elat. Nouv. v. p. 61 (1893) [2].

*Hab.* Mexico [2], Yolos and Peras (*Sallé*).

The known localities for this species are all in the State of Oaxaca. From the series of examples before me it is evident that the var. *a* of Candèze belongs to another species, and that his *A. ciocolatinus* is nothing but a dark unicolorous variety of *A. amabilis*. The latter is compared by him with *A. vaccinus*, but it has no affinity with that insect. In the form of *A. amabilis* described by Candèze, of which I have seen two examples only, the thorax is black, with a large triangular rufo-ferruginous patch on either side at the base, this extending forwards to the apex in one specimen. The elytra vary in colour from testaceous-brown to black; the suture is cinereo-pubescent, the rest of the elytral pubescence (except a short streak below the shoulders in some specimens) partaking of the ground-colour; there is no trace of a testaceous humeral or submarginal stripe. *A. amabilis* may be known from its allies by its comparatively short, broad form, and the transverse, densely punctured thorax, which is rounded at the sides in both sexes and has long and divergent hind angles, these being slightly incurved at the tip. The elytra are a little rounded at the sides, gradually narrowing from about the basal third in the male, and from the middle in the female. One of the types is figured; also a pale variety from Yolotepec.

### 18. **Agriotes scapularis.** (Tab. XXIII. fig. 7.)

*Dolopius scapularis*, Chevr. in Dej. Cat. 3rd edit. p. 108[1].

*Agriotes amabilis*, var. *a*, Cand. Monogr. Elat. iv. p. 366[2].

Moderately elongate, narrow, rather convex, shining; black or piceous, the prothorax and propleuræ rufo- or flavo-ferruginous, the prothorax usually with a black or piceous patch in front, narrowing behind and about reaching the middle; the elytra with a more or less distinct submarginal testaceous vitta; the basal joint of the antennæ, and the abdomen in part, ferruginous, the legs brownish or testaceous; the head and prothorax, except on the anterior dark mark, and the suture and submarginal vitta of the elytra, yellowish-cinereous-pubescent, the pubescence on the rest of the prothorax and elytra fuscous, that on the under surface pale yellowish-cinereous. Head densely punctured; antennæ extending slightly beyond the hind angles of the prothorax in the male, a little shorter in the female, joints 2 and 3 short, equal, 3 much shorter than 4. Prothorax considerably broader than long, very gradually narrowing from the base forwards, more parallel in the male, the sides rounded in front and feebly sinuate behind; the hind angles long, narrow, and acute, slightly divergent, and obsoletely carinate; the surface closely, finely punctate, the punctuation becoming more diffuse at the base, canaliculate behind; the marginal carina faint, but distinct throughout. Elytra three times the length of the prothorax, slightly rounded at the sides, narrowing almost from the base in the male, from about the basal third in the female, somewhat pointed behind, the apices sharp; punctate-striate, the interstices flat and rugulosely punctured. Beneath densely and finely, the prosternum and propleuræ sparsely, punctate. Hind coxal plates very little widened inwards.

Var. *a*. The submarginal vitta of the elytra obsolete; the prothoracic black mark sometimes reaching to near the base and less narrowed posteriorly (oval, or widening forwards), sometimes obsolete; the elytra with the suture and a submarginal stripe cinereo-pubescent.

Length $5\frac{1}{2}$–7, breadth $1\frac{2}{3}$–$2\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* Mexico[1 2] (*coll. Janson, ex Dejean*), Cordova, Juquila, Yolos (*Sallé*), Almolonga, Jalapa, Oaxaca (*Höge*).

Numerous examples of the vittate form, six of the variety, one of the latter (from

Cordova) having the elytral pubescence almost uniformly pale. Smaller and much narrower than *A. amabilis*; the thorax less rounded at the sides, with more acute and less divergent hind angles; the elytra usually vittate, with a submarginal stripe of pallid pubescence, the suture also being clothed with pale hairs. The present insect is still more closely allied to *A. quadrivittatus*, from which it may be separated by its narrower and less fusiform shape, and also by the black patch on the anterior part of the thorax being triangular or oval, instead of strongly transverse. A specimen from Oaxaca is figured.

### 19. **Agriotes quadrivittatus.** (Tab. XXIII. figg. 8; 9, var. β.)

*Agriotes quadrivittatus*, Cand. Monogr. Elat. iv. p. 366[1].

*Hab.* Mexico[1], Puebla, Playa Vicente, Tuxtla, Jacale (*Sallé*), Cordova (*Sallé*, *Höge*), Fortin in Vera Cruz (*H. H. Smith*), Almolonga, Tapachula (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Senahu in Vera Paz, Zapote (*Champion*), Guatemala city (*Salvin*).

Var. α. Black, the elytral vittæ indistinct or obliterated; the elytra with a sutural and a submarginal stripe of cinereous pubescence, the prothorax sometimes with a transverse patch of brownish pubescence on the disc.

*Hab.* Mexico, Tuxtla (*Sallé*), Playa Vicente (*Höge*).

Var. β. Black, the suture of the elytra very narrowly cinereo-pubescent. (Fig. 9.)

*Hab.* Mexico (*coll. Janson*), Cordova (*Sallé*), Playa Vicente (*Höge*).

Var. γ. Black or brownish-black, the prothorax rufous or flavo-ferruginous; the elytra with the suture very narrowly, and a short submarginal stripe, cinereo-pubescent.

*Hab.* Mexico, Cordova (*Sallé*).

In the typical form of this variable species the thorax is rufous or flavo-ferruginous, with a strongly transverse black patch on the disc a little before the middle, this sometimes extending forwards to the apex, or divided down the middle so as to form two spots. The varieties are much rarer than the type; they occur at the same localities. The elytra are comparatively short and a little rounded at the sides, rapidly narrowed from the base in the male, less attenuate in the female.

This is one of the commonest species of the genus in Mexico, but from the more southern localities single examples only have been obtained. A typical specimen from Tapachula and one of the var. β from Playa Vicente are figured.

### 20. **Agriotes trilineatus.** (Tab. XXIII. fig. 10.)

Moderately elongate, very narrow, rather convex, shining; piceous or pitchy-brown, the head in front, the prothorax and propleuræ rufo-ferruginous, the elytra indeterminately paler at the sides, the abdomen in great part ferruginous, the basal joint of the antennæ and the legs testaceous; the prothorax with a large rounded patch on the disc, divided down the centre, and the elytra, the suture and a narrow indistinct submarginal abbreviated vitta excepted, thickly clothed with fulvous-brown pubescence, the rest of the

pubescence on the upper surface and also that beneath yellowish-cinereous. Head densely, finely punctate; antennæ scarcely reaching the hind angles of the prothorax, joints 2 and 3 equal, 3 shorter than 4. Prothorax about as long as broad, subcylindrical, the sides rounded in front and feebly sinuate behind; the hind angles moderately long and acute, feebly divergent, and obsoletely carinate; the surface densely, finely punctate, obsoletely canaliculate behind, and with a smooth median line; the marginal carina distinct throughout. Elytra three times the length of the prothorax, a little rounded at the sides, gradually narrowing from the basal third, conjointly rounded at the apex; punctate-striate, the interstices flat and thickly, rugulosely punctate. Beneath densely, finely punctate, the prosternum more sparsely punctured. Hind coxal plates slightly widened in their inner third.

Length $6\frac{1}{2}$, breadth $1\frac{3}{5}$ millim.

*Hab.* NICARAGUA. Chontales (*E. M, Janson*).

Two examples, one of which is a female, the other probably a male. This small species somewhat resembles *A. tæniatus*, but it has the thorax much less elongate, with the discoidal marks (which are formed by darker pubescence only) rounded externally; the upper surface is also more finely punctured and smoother.

### 21. **Agriotes binotatus.** (Tab. XXIII. fig. 11.)

Elongate, narrow, convex, slightly shining; pale brown, the prothorax with two rather broad, oblong, darker marks on the disc, the legs testaceous; above and beneath thickly clothed with pale yellowish-cinereous pubescence, the hairs on the prothorax radiating from the median line. Head densely punctured; antennæ about reaching the hind angles of the prothorax, joints 2 and 3 equal in length, 3 shorter than 4. Prothorax slightly longer than broad, subcylindrical, the sides rounded in front and feebly sinuate behind; the hind angles moderately long, acute, and scarcely divergent, finely carinate; the surface densely, finely punctate, feebly canaliculate at the base, and with an incomplete smooth median line; the base with a distinct incisure on either side; the marginal carina very fine, entire. Elytra rather more than three times the length of the prothorax, and slightly wider than it, somewhat rounded at the sides, rapidly narrowing from a little below the base, attenuate behind; punctate-striate, the interstices flat and rugulosely punctured. Beneath densely and finely punctate. Hind coxal plates a little widened in their inner third.

Length $9\frac{1}{2}$–10, breadth $2\frac{1}{2}$–$2\frac{3}{5}$ millim.

*Hab.* GUATEMALA, Sinanja in Vera Paz (*Champion*).

Four examples, probably including both sexes (the female only identified), all from the vicinity of the Sinanja river, a tributary of the Polochic. This insect somewhat resembles *A. fulvescens*; but it is much narrower, the thorax is shorter, with less produced, scarcely divergent hind angles, the elytra are more finely punctate-striate, &c. The thorax has an oblong darker mark on either side of the disc.

### 22. **Agriotes vaccinus.** (Tab. XXIII. fig. 12.)

*Agriotes vaccinus*, Cand. Monogr. Elat. iv. p. 372[1].

*Hab.* MEXICO, Orizaba (*coll. Janson*[1]), Cordova (*Sallé*); GUATEMALA, Sabo and Sinanja in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*).

Found in abundance by myself in Vera Paz. This insect is allied to *A. longipennis*, but differs from it in having the thorax less convex and gradually narrowing from the base, with the surface finely and sparsely punctate, the basal incisures much deeper,

and the hind angles more distinctly carinate. The localities are all on the Atlantic slope. A specimen from Sabo is figured.

### 23. **Agriotes longipennis.** (Tab. XXIII. fig. 13.)

*Agriotes longipennis*, Cand. Monogr. Elat. iv. p. 371[1].

*Hab.* Mexico, Toxpam, Cordova, Jacale (*Sallé* [1]); Guatemala, Cerro Zunil, Dueñas Calderas, San Gerónimo (*Champion*).

In this species the elytra are unusually elongate (more than three times the length of the thorax), and considerably wider than the thorax, a little rounded at the sides, and somewhat rapidly narrowed from about the basal third. The thorax is convex, subcylindrical, rounded at the sides in front, with very long, acute, divergent, feebly carinate hind angles; the surface is closely, coarsely punctate, and somewhat deeply canaliculate behind; the marginal carina is incomplete, and the basal incisures shallow. The elytra are finely punctate-striate. A specimen from Calderas is figured.

### 24. **Agriotes curticollis.** (Tab. XXIII. fig. 14, ♀.)

Elongate, narrow, somewhat fusiform, convex, shining; piceous or brown, the hind angles of the prothorax and the suture and the outer part of the elytra obscure testaceous in one specimen; the antennæ and legs brownish-testaceous; above and beneath rather sparsely clothed with yellowish-cinereous pubescence. Head densely, finely punctate; antennæ reaching the hind angles of the prothorax in the female, slightly longer in the male, joint 3 a little longer than 2, and almost as long as, but narrower than, 4. Prothorax much broader than long, the sides rounded anteriorly, subparallel behind in the male; the hind angles long, narrow, acute, and divergent, finely carinate; the surface sparsely, very finely punctate, obsoletely canaliculate behind; the base feebly incised on either side; the marginal carina completely obliterated at the middle. Elytra three and two-thirds the length of the prothorax, and broader than it, somewhat rounded at the sides, narrowing from a little below the base in the male, from about the basal third in the female, the apices narrow and conjointly rounded; finely punctate-striate, the interstices almost flat and very finely, rugulosely punctate. Beneath closely and finely, the prosternum and propleuræ sparsely, punctate. Hind coxal plates very little widened inwards.

Length $8\frac{2}{3}$–9, breadth $2\frac{2}{5}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*); Panama, Volcan de Chiriqui 4000 feet (*Champion*).

A male from Chiriqui and a female from Costa Rica. In its very elongate elytra this species resembles *A. longipennis*, but differs from that insect in the relatively longer third joint of the antennæ, and the shorter, more sparsely and more finely punctured thorax, which has narrower and more acute hind angles. From *A. vaccinus* it may be known by the short thorax, with feeble basal incisures, &c. The Costa Rican specimen is figured.

### 25. **Agriotes quadraticollis.** (Tab. XXIII. fig. 15.)

Moderately elongate, convex, subopaque, the elytra slightly shining; piceous or brown, the prothorax with the sides behind, or the hind angles, and the sides of the abdomen, ferruginous, the elytra sometimes with the sides or a submarginal vitta obscure testaceous, the basal joint of the antennæ and the legs testaceous; above and beneath thickly clothed with pale yellowish-cinereous or pale greyish pubescence, the elytra in

some specimens with a broad space down the disc of each, and the margins fusco-pubescent with a few paler hairs intermixed (leaving a sutural and a submarginal stripe of pale hairs). Head very densely punctured; antennæ short, not reaching the hind angles of the prothorax, joints 2 and 3 equal, 3 shorter than 4. Prothorax about as long as broad, subcylindrical, the sides rounded in front and straight or very feebly sinuate behind; the hind angles long and acute, not or feebly divergent, without distinct carina; the surface very densely, finely punctate, canaliculate behind; the base feebly incised on either side; the marginal carina complete. Elytra two and two-thirds the length of the prothorax, subparallel to about the basal third and narrowing thence to the apex, somewhat pointed behind; punctate-striate, the interstices flat and rugulosely punctured, rougher at the base. Beneath densely and finely, the prosternum and propleuræ more coarsely, punctate. Hind coxal plates slightly widened in their inner third.

Length 7–8, breadth 2–2⅓ millim. (♀.)

*Hab.* Guatemala, Capetillo and San Gerónimo (*Champion*).

Eight specimens, females only identified. More parallel than the females of *A. guatemalensis*, *A. opacicollis*, and *A. mixtus*, the thorax less transverse and broader anteriorly than in the first-mentioned species, and with a complete marginal carina. It has a squarer thorax than most of its allies. The pubescence of the elytra is almost unicolorous in some specimens, and in others it forms a paler sutural and submarginal stripe. A specimen from San Gerónimo is figured.

### 26. **Agriotes cinereiventris.**

Rather short, narrow (♂), a little broader (♀), convex, shining, the head and elytra duller; black,—the male with the propleuræ and prothorax rufo-ferruginous, the latter with an oval black mark on the disc extending to the base and apex,—the basal joint of the antennæ rufo-testaceous, the legs testaceous; above rather sparsely pubescent, the pubescence on the head and prothorax fusco-cinereous, that on the scutellum, suture, and sides of the elytra in front cinereous, and on the rest of the elytra fuscous; beneath thickly cinereo-pubescent. Head densely punctured; antennæ extending to a little beyond the hind angles of the prothorax in the male, slightly shorter in the female, joints 2 and 3 equal in length, 3 much shorter than 4. Prothorax about as long as broad, subcylindrical, the sides rounded in front, and in the male sinuate behind, subparallel towards the base in the female; the hind angles moderately long and acute, divergent in the male, without carina; the surface thickly, rather coarsely punctate; the base incised on either side; the marginal carina distinct throughout. Elytra two and two-thirds the length of the prothorax, narrowing from about the middle in both sexes, pointed behind, the apices acute; punctate-striate, the interstices flat and densely rugulose, rougher at the base. Beneath densely and finely, the prosternum and propleuræ coarsely and more sparsely, punctate. Hind coxal plates scarcely widened inwards.

Length 6–7⅔, breadth 1¾–2 millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

One male and three females. This species is of about the same size as *A. alternus*; but it is more parallel, the thorax is coarsely punctured, and the elytra are deeply punctate-striate, with the interstices more rugose. The females are broader than the male, and entirely black. The elytra are much duller than the thorax.

### 27. **Agriotes insolitus.** (Tab. XXIII. figg. 16, ♂; 17, ♀.)

*Athous insolitus*, Laferté, in litt.

♂. Moderately elongate, narrow, rather convex, shining; black, the elytra sometimes with a faint brassy lustre, the antennæ piceous or pitchy-brown, with the two basal joints testaceous, the legs testaceous; above

yellowish-cinereous-pubescent, the elytra each with a more or less distinct stripe of fuscous or blackish pubescence near the suture, sometimes extending to the greater part of the surface, the body beneath thickly clothed with cinereous or yellowish-cinereous pubescence. Head thickly, finely punctate; antennæ extending to a little beyond the hind angles of the prothorax, joints 2 and 3 equal in length, 3 shorter than 4. Prothorax slightly broader than long, the sides rounded anteriorly and feebly sinuate behind; the hind angles long, acute, and divergent, without distinct carina; the surface very finely, sparsely punctate, in some specimens feebly canaliculate at the base; the base feebly incised on either side; the marginal carina distinct throughout. Elytra three times the length of the prothorax, and slightly wider than it, somewhat rounded at the sides, and narrowing from a little below the base, attenuate behind; punctate-striate, the interstices flat and rugulose. Beneath densely and very finely, the prosternum and propleuræ sparsely, punctate. Hind coxal plates slightly widened in their inner third.

♀. Broader; rufo-testaceous, the base of the head, a large oval spot on the disc of the prothorax, the prosternum (except in front), and the metasternum, black, the elytra testaceous or brownish-testaceous; the antennæ brown, with the basal joints testaceous; the pubescence yellowish-cinereous.

*Var.* Rufo-testaceous, the head, the prosternum (except in front), the metasternum, and elytra black, the latter with a short testaceous humeral stripe. (♀.)

Length $6\frac{1}{4}$–$7\frac{2}{3}$, breadth 2–$2\frac{1}{2}$ millim.

*Hab.* Mexico (*coll. Janson, ex Laferté*), Zacualtipan and Real del Monte in Hidalgo (*Höge*).

Numerous examples. Closely allied to *A. alternus*, but larger and more elongate; the elytra submetallic in some specimens, and with the pubescence differently arranged in the typical forms. The sexes are very dissimilar in colour, the females corresponding with some of the varieties (♂ and ♀) of *A. alternus*. The males have the suture and a broad marginal stripe clothed with yellowish-cinereous pubescence (leaving a more or less distinct fusco-pubescent stripe on the disc of each elytron); in the females the pubescence is almost entirely pale. The single (♂) specimen in the Laferté collection is labelled with the specific name here adopted.

### 28. **Agriotes alternus.** (Tab. XXIII. fig. 18, ♀.)

*Agriotes alternus*, Cand. Monogr. Elat. iv. p. 371[1].

*Hab.* Mexico[1] (*coll. Janson*), Toxpam, Cordova, and Orizaba in Vera Cruz, Parada and Juquila in Oaxaca (*Sallé*), Oaxaca (*Höge*).

This small species may be chiefly distinguished by its short and sparsely, finely punctured thorax, the hind angles of which are slightly divergent. It is very variable in colour in both sexes, and the pubescence on the elytra is in some specimens uniformly yellowish-cinereous, instead of being arranged in alternate light and dark lines as in the type. The black form only was known to Candèze. The thorax is often rufo-ferruginous, or rufo-ferruginous with an oval black spot on the disc, this being sometimes extended so as to leave the margins only rufescent. The elytra are black, brown, or brownish-testaceous; they usually have the alternate interstices, or the suture and a submarginal stripe, yellowish-cinereous-pubescent. The different varieties have all been obtained in the vicinity of Cordova.

### 29. **Agriotes quadrilineatus.** (Tab. XXIII. fig. 19, ♀.)

♀. Elongate, narrow, convex, subopaque: brown, the head, except in front, a broad indeterminate space along the disc of the prothorax extending from the apex to near the base, the prosternum, propleuræ, and metasternum piceous; the antennæ blackish-brown, with the basal joint rufo-testaceous, the legs testaceous; above densely pubescent, the pubescence on the second and fourth interstices of the elytra, and also that on their exterior margin, brown, that on the rest of the upper surface pale yellowish-grey, whitish along the suture, the hairs on the disc of the prothorax transversely arranged on either side of the median line; beneath densely clothed with whitish pubescence. Head densely punctured; antennæ short, not reaching the hind angles of the prothorax, joint 3 slightly longer than 2, and a little shorter than 4. Prothorax very much longer than broad, subcylindrical, a little rounded at the sides, the latter arcuately converging in front and slightly converging behind; the hind angles moderately long and divergent, not carinate; the surface densely, finely punctate, deeply canaliculate behind; the base with short but distinct incisures; the marginal carina almost obliterated at the middle. Elytra two and two-thirds longer than the prothorax, rapidly narrowing from about the basal third, attenuate behind; punctate-striate, the interstices feebly convex and rugulosely punctured. Beneath closely and finely, the prosternum and propleuræ more sparsely, punctate. Hind coxal plates slightly widened in their inner third. Length $9\frac{1}{2}$, breadth $2\frac{2}{5}$ millim.

*Hab.* GUATEMALA, Senahu in Vera Paz (*Champion*).

One specimen. This insect slightly resembles *A. fulvescens*; but it is considerably narrower than that species, and has the elytra more attenuate and the hind angles of the thorax much less produced. The pubescence on the under surface and along the elytral suture is whiter than that on the other parts of the body; the brown hairs on the second and fourth interstices form two well-defined stripes on each elytron.

### 30. **Agriotes cruciatus.** (Tab. XXIII. fig. 20.)

Moderately elongate, narrow, rather convex, slightly shining; black or blackish-brown, the prothorax testaceous, with a large cruciform black or blackish-brown patch on the disc not quite reaching the base, the basal joint of the antennæ and the scutellum sometimes obscure testaceous; the legs brown, the femora sometimes paler; the under surface much paler than above, the propleuræ entirely testaceous; above and beneath thickly pubescent, the pubescence on the prothorax partaking of the ground-colour, that on the elytra cinereous along the suture and at the sides, and fuscous or fusco-cinereous on the rest of the surface—in one specimen (♀) uniformly yellowish-cinereous, the under surface uniformly yellowish-cinereous-pubescent. Head densely punctured; antennæ extending to some distance beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 equal, 3 shorter and narrower than 4. Prothorax about as long as broad, the sides rounded anteriorly and subparallel behind; the hind angles moderately produced, acute, slightly divergent, and not carinate; the surface densely, finely punctate, canaliculate behind, and with indications of a smooth median line; the marginal carina distinct at the base and apex only. Elytra about three and one-fourth times the length of the prothorax, narrowing from the basal third in the male, more parallel in the female, the apices rather sharp; punctate-striate, the interstices flat and rugulosely punctured. Beneath closely and finely, the propleuræ very sparsely, punctate, the prosternum with coarser punctures. Hind coxal plates slightly widened in their inner third.

Length $6\frac{3}{4}$–$8\frac{1}{4}$, breadth $1\frac{2}{3}$–$2\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Chiacam in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*).

Found in plenty by myself at Chiacam. This remarkably distinct species somewhat resembles *A. pulcherrimus*, but it is very much smaller and narrower, and has a shorter

thorax, which is marked with a sharply defined black cross. The elytra usually have the suture and a submarginal stripe clothed with paler pubescence.

### 31. **Agriotes incallidus.**

*Agriotes incallidus*, Cand. in litt.

Elongate, rather broad, moderately convex, shining; piceous, pitchy-brown, or reddish-brown, the elytra paler than the prothorax in dark specimens, the metasternum and abdomen ferruginous at the sides, the antennæ ferrugineo-testaceous, the legs testaceous; above somewhat thickly, beneath densely, clothed with pale yellowish-cinereous pubescence. Head closely punctured; antennæ slender, extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 subequal in length, 3 slightly shorter than 4. Prothorax a little longer than broad, subcylindrical, the sides rounded in front and feebly sinuate behind; the hind angles long and acute, moderately divergent, not carinate; the surface thickly, somewhat coarsely punctate, the punctuation becoming sparser behind, deeply canaliculate from the middle to the base; the base sharply incised on either side; the marginal carina obliterated for some distance before the middle. Elytra three times the length of the prothorax, and a little wider than it, slightly rounded at the sides, rapidly narrowing from about the basal third in both sexes, somewhat pointed behind, the apices acute; finely punctate-striate, the interstices flat and rugulosely punctured. Beneath, the propleuræ included, densely, finely punctate, the prosternum with coarser and more scattered punctures. Hind coxal plates slightly widened in their inner third.

Length $9\frac{1}{4}$–10, breadth $2\frac{3}{5}$–3 millim. (♂ ♀.)

*Hab.* MEXICO (*coll. Janson, ex Candèze*), Cordova (*Sallé*), Jalapa (*Höge*); GUATEMALA, Coban in Vera Paz (*Conradt*).

Numerous examples from Eastern Mexico, two only from Guatemala; one of the former is labelled with the name here adopted. This insect resembles *A. longipennis*; but it has the elytra relatively less elongate, and the thorax broader, with deep basal incisures. The last-mentioned character will serve to separate it from *A. fulvescens*, *A. monticola*, &c. From *A. vaccinus* it may be known by the more parallel, coarsely punctured, very deeply canaliculate thorax.

### 32. **Agriotes monticola.**

♀. Elongate, narrow, convex, subparallel, slightly shining; reddish-brown, the disc of the prothorax indeterminately infuscate in the middle; above and beneath somewhat thickly clothed with yellowish-cinereous pubescence, the pubescence on the disc of the prothorax radiating from the centre. Head densely punctured; antennæ not extending beyond the hind angles of the prothorax, joint 3 longer than 2, and very little shorter than 4. Prothorax subcylindrical, a little longer than broad, the sides rounded in front and feebly sinuate behind; the hind angles moderately long and slightly divergent, not carinate; the surface closely and rather coarsely punctate, the punctuation becoming sparser on the disc, canaliculate behind, and with a narrow smooth space along the middle; the base feebly incised on either side; the marginal carina distinct at the base and apex only. Elytra three and one-third times the length of the prothorax, gradually widening to the middle and narrowing thence to the apex, the apices narrow; punctate-striate, the interstices feebly convex and rugulosely punctate. Beneath closely and finely, the prosternum and propleuræ more sparsely, punctate. Hind coxal plates slightly widened in their inner third.

Length $9\frac{1}{8}$, breadth $2\frac{2}{5}$ millim.

*Hab.* GUATEMALA, Volcan de Agua between 8500 and 10,500 feet (*Champion*).

One example. This insect is allied to *A. incallidus*; but it is narrower and more

parallel than the female of that species, the thorax is more sparsely punctured on the disc, and the elytra are widest at the middle.

### 33. **Agriotes mexicanus.**

Moderately elongate, rather narrow, convex, slightly shining; piceous or reddish-brown, the elytra brown; the antennæ brown, with the basal joints testaceous, the abdomen ferruginous at the sides, the legs testaceous; above and beneath thickly clothed with pale yellowish-cinereous or pale greyish pubescence, the elytra in one specimen with some brownish pubescence on the second and third interstices. Head densely, finely punctate; antennæ extending slightly beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 equal in length, 3 much shorter than 4. Prothorax about as long as broad, subcylindrical, the sides rounded in front and sinuate behind; the hind angles long, acute, and divergent, not or obsoletely carinate; the surface very closely, finely punctate, feebly canaliculate behind; the base feebly incised on either side; the marginal carina faintly indicated at the base. Elytra three times the length of the prothorax, and slightly wider than it, a little rounded at the sides, narrowing from the basal third, somewhat pointed behind; punctate-striate, the interstices flat and rugulosely punctured. Beneath densely and very finely, the prosternum more sparsely, punctate. Hind coxal plates slightly widened inwards.

Length 7–7$\frac{4}{5}$, breadth 2–2$\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Mexico (*Sallé*), Jalapa (*Höge*).

Four specimens. Much smaller and less elongate than *A. incallidus*, the thorax more densely and much more finely punctate, and feebly incised at the base, the antennæ shorter in the male. From *A. binotatus*, apart from its less elongate elytra, it may be known by the more finely and less densely punctured thorax.

### 34. **Agriotes guatemalensis.**

Moderately elongate, narrow, convex, slightly shining; piceous or brown, the abdomen usually ferruginous at the sides in dark specimens, the basal one or two joints of the antennæ and the legs testaceous; above and beneath somewhat thickly clothed with yellowish-cinereous pubescence, the elytra with darker hairs intermixed. Head very densely punctate; antennæ extending to some distance beyond the hind angles of the prothorax in the male, considerably shorter in the female, joints 2 and 3 equal, 3 much shorter than 4. Prothorax about as long as broad in the male, more transverse in the female, subcylindrical, and with the sides rounded in front and slightly sinuate behind in the male, gradually narrowing from a little before the base in the female; the hind angles moderately long and narrow, not or obsoletely carinate, divergent in the male; the surface densely, finely punctate, deeply canaliculate behind; the base feebly incised on either side; the marginal carina obliterated at the middle. Elytra three times the length of the prothorax, and wider than it in the male, a little rounded at the sides, narrowing from about the basal third in the male, from the middle in the female, somewhat pointed behind; punctate-striate, the interstices flat and rugulosely punctured, rougher at the base. Beneath closely and finely, the prosternum and propleuræ more coarsely, punctate. Hind coxal plates a little widened in their inner third.

Length 6$\frac{2}{3}$–7$\frac{3}{4}$, breadth 2–2$\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, Capetillo (*Champion*).

Eight specimens. More parallel and more shining than *A. opacicollis*; the thorax a little less densely punctured, distinctly narrower than the elytra in the male, and also more transverse in the female; the elytra less attenuate in both sexes, the pubescence not paler along the suture and at the sides. From the still more nearly allied *A. mixtus*, from Western Mexico, it may be known by the colour of the pubescence

of the thorax and elytra, the slightly longer third joint of the antennæ, &c. As in *A. mixtus*, the females differ considerably from the males.

### 35. **Agriotes opacicollis.** (Tab. XXIII. figg. 21, ♂; 21 *a*, genitalia.)

Moderately elongate, narrow, convex, opaque, the elytra slightly shining; piceous or pitchy-brown, the prothorax with the hind angles or a triangular patch on either side at the base ferrugineo-testaceous, the abdomen and metasternum sometimes in part ferruginous, the basal joint of the antennæ and the legs testaceous; the head, prothorax, scutellum, and under surface, and the elytra with the suture to the apex and the sides to about the middle, thickly clothed with yellowish-cinereous pubescence, the prothorax in some specimens with a rhomboidal patch on the disc clothed with brownish hairs, the rest of the elytral pubescence fuscous. Head very densely punctate; antennæ extending to a little beyond the hind angles of the prothorax in the male, slightly shorter in the female, joints 2 and 3 equal, 3 shorter than 4. Prothorax as long as broad, subcylindrical, the sides rounded in front and sinuate behind; the hind angles long and divergent, not carinate; the surface very densely and finely punctate throughout, finely canaliculate behind; the base feebly incised on either side; the marginal carina indistinct from the middle forwards. Elytra about two and three-fourths the length of the prothorax, slightly rounded at the sides, rapidly narrowing from a little below the base in both sexes, somewhat pointed behind; punctate-striate, the interstices flat and rugulosely punctured. Beneath more shining than above, densely and finely, the prosternum and propleuræ more coarsely, punctate. Hind coxal plates slightly widened in their inner third.

*Var.* Reddish-brown, the base of the head, and a large rhomboidal patch on the disc of the prothorax, black or piceous.

Length 7–7½, breadth 2–2⅕ millim. (♂ ♀.)

*Hab.* Guatemala, Zapote (*Champion*).

Twenty-three specimens, three of which appertain to the variety. This species has the thorax so densely punctured as to appear opaque. It is perhaps nearest allied to *A. mixtus*; but differs from it in the densely punctured thorax, which is more parallel in the female, the more attenuate elytra in both sexes, &c. The puncturing of the thorax is a little coarser and denser than in *A. mexicanus*; the brownish-pubescent rhomboidal mark on the disc is well-defined in some of the typical specimens, as well as in the variety.

### 36. **Agriotes hirsutus.**

Moderately elongate, rather narrow (♂), much broader and more convex (♀), slightly shining, black, the legs piceous or pitchy-brown; above somewhat thickly clothed with moderately long, semierect, fuscous or blackish hairs, the under surface with brownish-cinereous, decumbent pubescence. Head densely punctured; antennæ extending to far beyond the hind angles of the prothorax in the male, very short in the female, joints 2 and 3 short, equal, 3 shorter than 4. Prothorax broader than long, more transverse in the female, narrowing from the base in the male, broader anteriorly and more rounded at the sides in the female, the sides converging in front and sinuate behind; the hind angles long, acute, and divergent, without distinct carina; the surface densely and somewhat coarsely punctate; the base feebly incised on either side; the marginal carina distinct towards the base only, completely obliterated anteriorly. Elytra three times the length of the prothorax, narrowing from a little below the base in the male, widest at the middle in the female, somewhat pointed behind; punctate-striate, the interstices flat in the male, convex in the female, and rugulosely punctured. Beneath, the prosternum and propleuræ included, thickly and rather coarsely punctate, the ventral segments more finely and more diffusely punctured. Hind coxal plates a little widened in their inner third.

Length 7½–9½, breadth 2⅖–3 millim. (♂ ♀.)

*Hab.* Mexico, Ciudad in Durango (*Höge*).

One pair. Differs from all the other Central-American species of the genus in the semierect pubescence of the upper surface, the insect in this respect resembling *Hemicrepidius carbonatus*. The marginal carina of the thorax is almost obsolete. The prosternum and propleuræ are closely punctured. The sexes are very dissimilar in appearance. *A. hispidus*, Lec., has similar pubescence, but differs in numerous details. *A. hirsutus* is unknown to Dr. Candèze.

### 37. **Agriotes mixtus.**

Moderately elongate, rather convex, narrow (♂), broader (♀), slightly shining; black or piceous, the females with a triangular rufo-ferruginous patch of variable extent on either side at the base, sometimes extending broadly forwards to the apex (leaving an oval black patch on the disc), the elytra often brown or reddish-brown in this sex; the basal joint of the antennæ testaceous, the legs testaceous or brownish; the prothorax with an oval patch on the disc, and the elytra, except along the suture and at the sides, brownish- or fusco-pubescent, the rest of the pubescence on the upper surface cinereous, that on the under surface dense and whitish. Head densely punctured; antennæ extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 short, scarcely as long as 2, and much shorter than 4. Prothorax broader than long, gradually narrowing from the base in the female, more cylindrical in the male, the sides rounded in front and feebly sinuate behind; the hind angles long, acute, and slightly divergent, not carinate; the surface densely, somewhat coarsely punctate, deeply canaliculate behind; the base with a distinct incisure on either side; the marginal carina faint, obliterated at the middle in some specimens, complete in others. Elytra three times the length of the prothorax, a little rounded at the sides, narrowing from about the basal third in both sexes, somewhat pointed behind; punctate-striate, the interstices feebly convex and rugulosely punctured. Beneath densely and finely, the prosternum and propleuræ more sparsely, punctate. Hind coxal plates very little widened inwards.

Length 6–8½, breadth 1¾–2¼ millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo 4600 feet, and Xucumanatlan 7000 feet, both in Guerrero (*H. H. Smith*).

Seven females and one male, the females varying in the colour of the thorax and elytra. Smaller and narrower than *A. amabilis*, the hind angles of the thorax less divergent, the elytra more deeply punctate-striate, and with the pubescence differently coloured, the third joint of the antennæ shorter, &c. The pale greyish pubescence along the suture and at the sides of the elytra does not form well-defined stripes as in many of the allied species. The male is much narrower than the female.

### 38. **Agriotes pauxillus.**

Rather short, narrow, convex, slightly shining; piceous or brown, the elytra sometimes with traces of an obscure testaceous submarginal vitta, the abdomen usually in part ferruginous, the basal joint of the antennæ and the legs testaceous; the head, prothorax, scutellum, and under surface, and the elytra with the suture and the sides or a submarginal stripe, clothed with cinereous or yellowish-cinereous pubescence, the pubescence on the rest of the elytra usually fuscous or brownish, the prothorax sometimes with brownish hairs on the middle of the disc. Head very densely punctured; antennæ about reaching the hind angles of the prothorax, joint 3 distinctly shorter than 2, and much shorter than 4. Prothorax slightly broader than long, subcylindrical, the sides rounded in front and almost straight behind; the hind angles long and acute, feebly divergent, not carinate; the surface densely, finely punctate, shallowly canaliculate behind; the base feebly incised on either side; the marginal carina obliterated at the middle. Elytra three times the length of the prothorax, gradually narrowing from about the basal third, somewhat pointed behind, the apices sharp; punctate-striate, the interstices almost flat and rugulosely punctured,

rougher at the base. Beneath closely, finely punctate. Hind coxal plates slightly widened in their inner third.

Length $5\frac{7}{8}$–7, breadth $1\frac{7}{8}$–$2\frac{1}{8}$ millim.

*Hab.* Mexico (*coll. Janson, ex Laferté*), Capulalpam and Yolos (*Sallé*).

Ten specimens, probably including both sexes; females only identified. This obscure species may be known from most of the allied forms by the third joint of the antennæ being distinctly shorter than the second. From *A. mixtus* it may be separated by its more parallel shape, the slightly shorter third antennal joint, and the more rugose elytral interstices. From *A. cinereiventris*, with which it agrees in general shape, the present insect differs in the more densely and less coarsely punctured thorax, with more produced hind angles, and the rather shorter third antennal joint. The punctuation of the thorax is less dense than in *A. quadraticollis*.

### 39. **Agriotes angustatus.** (Tab. XXIII. figg. 22; 22 *a*, antenna.)

Rather short, narrow, parallel, moderately convex, shining; pale brown, the basal joint of the antennæ testaceous, the legs obscure testaceous; sparsely clothed with fine yellowish-cinereous pubescence. Head densely, rugosely punctured, feebly sulcate down the middle; antennæ short, not reaching the hind angles of the prothorax, joints 2 and 4 subequal in length, 3 distinctly shorter. Prothorax about as long as broad, subcylindrical, rounded at the sides in front; the hind angles moderately long, straight, and acute, not carinate; the surface thickly, coarsely punctate, canaliculate behind; the base very feebly incised on either side; the marginal carina distinct at the base only, completely obliterated anteriorly. Elytra two and two-thirds longer than the prothorax, and of the same width, parallel to the middle and narrowing thence to the apex, the apices conjointly rounded; punctate-striate, the interstices slightly convex on the disc, flat at the sides, and thickly punctured. Beneath closely and finely, the prosternum and propleuræ coarsely, punctate. Legs comparatively short; the basal joint of the hind tarsi about as long as the second and third united. Hind coxal plates scarcely widened inwards.

Length $5\frac{1}{2}$, breadth $1\frac{3}{5}$ millim.

*Hab.* Mexico, Jalapa (*Höge*).

One specimen, probably a female. This small species is not very closely allied to any of the other Central-American members of the genus. It is parallel in shape and very sparsely pubescent, with comparatively short legs, the hind angles of the thorax straight, and the third antennal joint considerably shorter than the second or fourth. From *A. pauxillus* it may be known by its narrower shape, the much more coarsely punctured thorax, the hind angles of which are less produced, the smoother and more convex elytral interstices, &c.

## Group **ADRASTINI.**

### GLYPHONYX.

*Glyphonyx*, Candèze, Monogr. Elat. iv. p. 451 (1863).

This is one of the best-defined genera amongst the Elateridæ. The described species —forty in number, sixteen of which are American—are spread over the warmer regions of both hemispheres. It is very well represented in Central America, whence we have received upwards of 400 specimens, belonging to twenty-three species, all but

five of which appear to be undescribed. The chief characters of the genus are:—The deeply inserted head; the convex, acuminate front, the anterior margins of which are strongly reflexed and meet at an angle in the centre; the inferior marginal carina of the thorax, this carina being replaced at the sides by a lateral carina—variable in length according to the species, and in many of them nearly reaching the apex,—the two meeting at the apex of the hind angles; the long basal joint of the antennæ; the widely separated double prosternal sutures, the enclosed space being excavate in front for the reception of the base of the antennæ; the feebly dilated posterior coxal plates (except in *G. dugesi*); the lamellate fourth tarsal joint; and the pectinate claws.

The species—many of which vary greatly in colour and size, or differ to some extent sexually—may be readily grouped by the form of the prosternal process, the greater or less approximation of the thoracic carinæ, and the relative length of the lateral one; in some few species the inferior marginal carina is partly obliterated behind. In *G. angulatus* and others the elytral epipleuræ are conspicuously angulate opposite the hind coxæ, and even hollowed for the reception of the apices of the femora. In *G. mimeticus*, Horn, the elytra are carinate near the sides at the apex. Some of the less elongate, small species superficially resemble the genus *Anchastomorphus*.

These insects, nearly all of which are very small and inconspicuous, resembling small *Agriotes*, are found upon herbage, and most of the novelties described have been found in abundance.

*a*. Prosternal process acuminate, more or less V-shaped, margined to the apex or nearly so, the slender posterior portion distinctly grooved or punctured down the centre *.

*a'*. Posterior coxal plates somewhat broadly and abruptly dilated in their inner third; prothorax subquadrate, about as long as broad . . . . . *dugesi*.

*b'*. Posterior coxal plates moderately and more gradually dilated in their inner third.

*a''*. The lateral and inferior marginal carinæ of the prothorax widely separated anteriorly, the inferior carina strongly sinuate behind.

*a'''*. The lateral carina nearly reaching the apex.

*a*⁴. Elytra narrowing from about the basal third.

*a*⁵. Prothorax a little broader than long, subquadrate (at least in the ♂); inferior marginal carina sharply defined throughout; propleuræ rather coarsely punctured . . . . . *quadraticollis*.

*b*⁵. Prothorax much broader than long, rounded at the sides anteriorly in both sexes; inferior marginal carina becoming faint behind; propleuræ sparsely and finely punctured . . . . . *brevicollis*.

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* The ante-apical tooth is taken as the apex, the internal (or lower) prolongation of the process being hidden within the mesosternal cavity.

$b^4$. Elytra relatively shorter, narrowing almost from the base; prothorax transversely subquadrate . . . . . *cuneatus.*

$b'''$. The lateral carina shorter, not extending beyond the middle.

$c^4$. Elytral interstices rugose, granulate towards the base; prothorax subquadrate; pubescence somewhat erect . . . . . *rugipennis.*

$d^4$. Elytral interstices rugulosely punctured; prothorax strongly transverse.

$c^5$. Elytra gradually narrowing from the basal third, testaceous, with a well-defined broad black sutural stripe; epipleuræ feebly angulate. *vittatus.*

$d^5$. Elytra rapidly narrowing from the basal third, with a sutural stripe and an oblique mark on the middle of the disc (obliterated in var.) black; epipleuræ sharply angulate . . . . . *angulatus.*

$b''$. The lateral and inferior marginal carinæ of the prothorax more approximate, the inferior carina feebly sinuate behind; prothorax nearly as long as broad.

$c'''$. The lateral carina extending to near the apex . . . . . *propinquus.*

$d'''$. The lateral carina short, not reaching the middle.

$e^4$. Body rather narrow; prothorax somewhat closely punctured; elytra comparatively short . . . . . *depressus.*

$f^4$. Body very narrow; prothorax sparsely punctured; elytra elongate . *tenuis.*

*b*. Prosternal process more gradually narrowing behind, sharply margined to the apex, the apex rounded . . . . . *nigritus.*

*c*. Prosternal process more or less Y-shaped, the triangular intercoxal portion margined, the posterior portion quite smooth and reduced to a thin lamina.

$c'$. Elytra carinate near the sides at the apex, the apices somewhat produced; lateral carina of the prothorax about reaching the middle: body rufo-testaceous . . . . . *mimeticus.*

$d'$. Elytra not carinate at the apex.

$c''$. The lateral and inferior marginal carinæ of the prothorax widely separated anteriorly, the inferior carina strongly sinuate behind.

$e'''$. The lateral carina nearly reaching the apex; elytra narrowing from the base: body testaceous.

$g^4$. Prothorax broader than elytra: length $5\frac{1}{2}$ millim. . . . . *laticollis.*

$h^4$. Prothorax not broader than the elytra: length $2\frac{2}{3}$–3 millim. . . . *flohri.*

$f'''$. The lateral carina about reaching the middle.

$i^4$. Body unicolorous, or with the suture, at most, slightly darker.

$e^5$. Deep black, the legs and antennæ testaceous . . . . . *ebeninus.*

$f^5$. Testaceous . . . . . *præcox.*

$j^4$. Body not unicolorous (except in pale vars.); elytra spotted or fasciate.

$g^5$. Black, the elytra with a subhumeral triangular spot and a large apical spot testaceous; hind angles of the prothorax not divergent. *quadrinotatus.*

$h^5$. Black, the elytra testaceous, with an indeterminate ante-median fascia and the suture infuscate; hind angles of the prothorax strongly divergent . . . . . *fasciatus.*

$i^5$. Rufo-testaceous, the elytra with the suture and a median fascia or common rhomboidal spot black or piceous . . . . . *cinctus.*

*d*″. The lateral and inferior marginal carinæ of the prothorax more approximate, the inferior carina feebly sinuate behind; the lateral carina about reaching the middle, or to a little beyond it.

*g*‴. Elytra (except in vars.) fasciate: body testaceous . . . . . *cruciellus.*

*h*‴. Elytra not fasciate.

*k*⁴. Epipleuræ sharply angulate: body varying in colour from piceous to testaceous. . . . . *teapensis.*

*l*⁴. Epipleuræ feebly angulate: body black or piceous, the elytra sometimes brown.

*j*⁵. Elytra very gradually narrowing from the basal third: length 3½–4½ millim. . . . . *parallelus.*

*k*⁵. Elytra rapidly narrowing from the basal third: length 2⅖–3 millim. *minimus.*

## 1. Glyphonyx dugesi.

*Glyphonyx dugesi*, Cand. Elat. Nouv. v. p. 66 (1893) [1].

*Hab.* Mexico, Durango city and Villa Lerdo in Durango (*Höge*), Guanajuato (*Dugès* [1]), Tepetlapa in Guerrero (*H. H. Smith*), Playa Vicente (*Sallé*).

Of this species, the type of which has been communicated by Dr. Candèze, we have received about a dozen specimens. It may be known by its comparatively large size, and the subquadrate, closely and coarsely punctured thorax. The antennæ have their second and third joints equal in length. The front is obtusely angulate and sharply margined. The thorax has a well-defined lateral carina extending almost to the apex; the inferior marginal carina is moderately sinuous behind; the basal plicæ are distinct, the basal incisures being very shallow. The hind coxal plates are rather broadly and abruptly dilated in their inner third. The prosternal process is long and acute, gradually narrowing behind, margined to near the tip.

## 2. Glyphonyx quadraticollis.

? *Elater inscius*, Say, Trans. Am. Phil. Soc. vi. p. 184 [1]; Complete Writings, ii. p. 622 [2].

? *Glyphonyx recticollis*, var. *a*, Cand. Monogr. Elat. iv. p. 454 [3].

Elongate, rather convex, shining; pitchy-black, piceous, or reddish-brown, the anterior and hind angles of the prothorax usually ferruginous, the suture usually infuscate in light-coloured specimens, the legs and antennæ testaceous; thickly clothed with yellowish-cinereous pubescence. Head closely and coarsely punctured; front with the strongly reflexed margins meeting at an obtuse angle in the centre; antennæ extending to a little beyond the hind angles of the prothorax in the male, slightly shorter in the female, joints 2 and 3 subequal in length. Prothorax subquadrate, a little broader than long, the sides parallel from the base almost to the apex in the male, more rounded anteriorly in the female; the hind angles acutely produced, not or feebly divergent; the lateral carina sharply defined and extending almost to the apex, the inferior marginal carina widely separated from it anteriorly and strongly sinuate behind; the surface somewhat thickly and rather coarsely punctured, with a narrow space down the middle impunctate; the basal plicæ well-defined. Elytra about two and four-fifths longer than the prothorax, and a little wider than it, narrowing from the basal third, somewhat pointed behind; punctate-striate, the interstices feebly convex and rugulosely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with scattered coarsish punctures; metasternum and abdomen thickly, finely punctate, the sides

of the metasternum with coarse punctures; prosternal process acuminate, margined almost to the tip. Posterior coxal plates moderately widened in their inner third.

Length $4\frac{1}{2}$–6, breadth $1\frac{1}{4}$–$1\frac{4}{5}$ millim. (♂ ♀.)

*Hab.* ? NORTH AMERICA [1 2 3].—MEXICO [3], Saltillo in Coahuila (*Dr. Palmer*), Guanajuato, Cordova, Yolos, Juquila, Oaxaca (*Sallé*), Jalapa (*Höge*), Orizaba (*coll. Janson*), Cuernavaca, Teapa (*H. H. Smith*), Playa Vicente (*Sallé*, *Höge*); GUATEMALA, Antigua (*Sallé*), Dueñas, Guatemala city (*Salvin*, *Champion*), Panzos, Senahu, and San Gerónimo in Vera Paz, Capetillo, Zapote (*Champion*); COSTA RICA, Caché (*Rogers*).

*Var.* a. Larger and more elongate. (Length 6–$8\frac{1}{5}$, breadth $1\frac{4}{5}$–$2\frac{1}{8}$ millim.) (♂ ♀.)

*Hab.* MEXICO, Cuernavaca in Morelos, Atoyac in Vera Cruz (*H. H. Smith*), Juquila (*Sallé*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, San Gerónimo (*Champion*).

This is the commonest and most widely distributed species of the genus within our limits, and it probably extends into the United States, as there are several examples of it in the Janson collection labelled "Am.-bor." The Mexican specimens referred by Candèze to *G. recticollis* (Say) (=*pumilus*, Erichs.) belong here. It is very variable in size and colour, but the suture of the elytra in pale specimens is, at most, faintly infuscate. From the North-American *G. recticollis*, for an example of which we are indebted to Dr. Horn, the present insect may be known, at least in the males, by the squarer thorax, with the lateral carina extending almost to the apex, and widely separated anteriorly from the inferior marginal one, the latter being also more strongly sinuate behind, and the more sparsely and less coarsely punctured propleuræ. The description of the typical form is chiefly taken from a long series from Jalapa. In some of the specimens (probably males) from various other localities the thorax is broader in front than behind. Small females appear to have the thorax more transverse, and more rounded at the sides anteriorly.

### 3. **Glyphonyx brevicollis.**

Moderately elongate, narrow, shining; black or piceous, the anterior and hind angles of the prothorax more or less testaceous, the lateral margins also pale in some specimens, the elytra usually more or less testaceous, this colour sometimes so extended as to leave a sutural stripe only infuscate, the antennæ and legs testaceous; thickly clothed with yellowish-cinereous pubescence. Head closely, finely punctate, the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 slightly shorter than 2. Prothorax considerably broader than long, the sides rounded in front and feebly sinuate behind; the hind angles acutely produced and moderately divergent; the lateral carina extending forwards to near the apex, the inferior marginal carina widely separated from it anteriorly and strongly sinuous behind; the surface finely and rather sparsely punctured; the basal plicæ very fine. Elytra three times the length of the prothorax, and slightly wider than it, narrowing from the basal third, and somewhat pointed behind; punctate-striate, the interstices feebly convex and rugulosely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with widely scattered fine punctures, the propleuræ smooth at the base; metasternum and abdomen finely and rather closely punctate, the sides of the meta-

sternum with coarse punctures; prosternal process acuminate, margined to the tip. Posterior coxal plates feebly dilated in their inner third.
Length $3\frac{1}{2}$–$4\frac{4}{5}$, breadth 1–$1\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Purula, Senahu, Chiacam, and San Juan in Vera Paz, Capetillo (*Champion*).

Found in plenty at Jalapa, more sparingly elsewhere. This insect is a close ally of *G. quadraticollis*, but may be known from it by the shorter, less parallel, more finely punctured thorax, the inferior marginal carina of which is almost obliterated behind in some specimens, the more attenuate elytra, with more distinctly angulate epipleuræ, and the smoother propleuræ. The elytra vary in colour from piceous to almost entirely testaceous; in some examples from Purula and elsewhere they are testaceous, with a well-defined black sutural stripe which is dilated at the base into a triangular patch. The specimens from Capetillo have the thorax more closely punctured than the others.

### 4. **Glyphonyx cuneatus.** (Tab. XXIII. fig. 23, underside of prothorax.)

Rather short, narrow, subfusiform, shining; varying in colour from piceous to rufo-testaceous, the head, prothorax (the hind angles excepted), and suture of the elytra usually infuscate or piceous in light-coloured specimens, the antennæ and legs testaceous; thickly clothed with yellowish-cinereous pubescence. Head thickly punctured; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 subequal in length. Prothorax transversely subquadrate, as broad a little below the apex as at the base, the sides rounded in front and parallel or very feebly sinuate behind; the hind angles acutely produced, not divergent; the lateral carina extending almost to the apex, the inferior marginal carina widely separated from it anteriorly and sinuate behind; the surface finely and rather closely punctate; the basal plicæ distinct. Elytra about two and three-fourths longer than the prothorax, and not wider than it, rapidly narrowing from a little below the base, somewhat pointed at the apex; punctate-striate, the interstices feebly convex at the sides, flat on the disc, and rugulosely punctured. Prosternum and propleuræ with scattered fine punctures; metasternum and abdomen closely, finely punctate, the sides of the metasternum with coarse punctures; prosternal process acuminate, margined to the tip. Posterior coxal plates moderately dilated in their inner third.
Length $3\frac{3}{4}$–$4\frac{3}{4}$, breadth 1–$1\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Atoyac in Vera Cruz (*H. H. Smith*), Motzorongo in Vera Cruz (*Flohr*), Teapa in Tabasco (*H. H. Smith*, *Höge*), Tapachula in Chiapas (*Höge*); British Honduras (*coll. Janson*), R. Hondo (*Blancaneaux*); Guatemala, Chacoj in Vera Paz, Zapote (*Champion*).

Found in plenty at Teapa, Rio Hondo, and Zapote. This insect is of about the same size as *G. parallelus*, but differs from that species in its squarer thorax, more attenuate elytra, and longer antennæ, and also in the form of the prosternal process. The colour is very variable, but it is usually much paler than in *G. parallelus*; some specimens are uniformly rufo-testaceous, and others have a well-defined dark sutural stripe.

## 5. Glyphonyx rugipennis.

Moderately elongate, convex, narrow, shining; black, the elytra in one example obscure reddish-brown with the suture broadly infuscate, the antennæ and legs testaceous; thickly clothed with rather long, fine, yellowish-cinereous pubescence, which is semierect on the upper surface and decumbent beneath. Head closely punctured; front triangular, the margins strongly reflexed and meeting at an obtuse angle in the centre; antennæ nearly half the length of the body in the male, shorter in the female, joints 2 and 3 subequal in length. Prothorax nearly as long as broad, subquadrate in the male, less parallel in the female, the sides rounded at the apex and feebly sinuate behind; the hind angles acutely produced, slightly divergent; the lateral carina short and very fine, extending to very little beyond the basal third, the inferior marginal carina widely diverging from it and faint or obliterated in the middle; the surface closely, rather finely punctate, with a narrow space down the middle impunctate; the basal plicæ very fine. Elytra about two and three-fourths longer than the prothorax, and slightly wider than it, narrowing from the basal third, and somewhat obtuse behind; punctate-striate, the interstices flat and densely, rugosely punctured, becoming smoother beyond the middle and granulate towards the base. Prosternum and propleuræ sparsely punctured; metasternum and abdomen closely and rather finely punctate; prosternal process sharply acuminate, margined to the tip. Posterior coxal plates moderately dilated in their inner third.

Length $4\frac{7}{8}$–$5\frac{1}{3}$, breadth $1\frac{1}{3}$–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Guatemala, Zapote (*Champion*).

Five specimens. This insect is of about the same size and shape as *G. quadraticollis*, but may be known from it, and all our other species of the genus, by the rugose elytral interstices. The inferior marginal carina of the thorax is obliterated in the middle in all but one of the specimens obtained, it being also much less distinct than in *G. quadraticollis*. The thorax, except for a narrow space along the middle, is closely punctured throughout. The pubescence on the upper surface appears to be more erect than usual. *G. fusculus*, Cand., from Cuba, is an allied form.

## 6. Glyphonyx vittatus.

Moderately elongate, narrow, shining; black, the elytra broadly testaceous at the sides (leaving a broad black or piceous attenuate sutural stripe), the margins usually infuscate or piceous, the antennæ brown, with the two basal joints testaceous, the legs testaceous, the under surface sometimes reddish-brown; thickly clothed with yellowish-cinereous pubescence. Head thickly punctured; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to considerably beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 shorter than 2. Prothorax much broader than long, the sides rounded in front and feebly sinuate behind; the hind angles acutely produced, feebly divergent; the lateral carina short, not reaching the middle, the inferior marginal carina widely diverging from it and strongly sinuate behind; the surface thickly, finely punctate; the basal plicæ very fine. Elytra three times the length of the prothorax, and scarcely wider than it, gradually narrowing from the basal third, and somewhat pointed behind; punctate-striate, the interstices rather convex and finely punctured. Prosternum and propleuræ sparsely punctured, the punctures on the propleuræ coarse; metasternum and abdomen thickly, finely punctate, the sides of the metasternum with coarser punctures; prosternal process acuminate, margined to near the tip. Posterior coxal plates moderately dilated in inner third.

Length $3\frac{1}{2}$–$4\frac{1}{8}$, breadth 1–$1\frac{1}{10}$ millim. (♂ ♀.)

*Hab.* Mexico, Omilteme, Xucumanatlan, Chilpancingo, and Amula in Guerrero (*H. H. Smith*).

Seven specimens. In the broad black well-defined sutural stripe of the elytra this

species resembles one of the varieties of *G. tenuis*, from which it may be known by its less elongate shape, short thorax, with more divergent carinæ, and the more acuminate prosternal process. The single specimen from Amula has the sutural stripe narrower and paler than usual. *G. vittatus* is smaller than *G. brevicollis*, and has darker antennæ, a much shorter marginal carina to the thorax, coarsely punctured propleuræ, &c. It is more parallel than *G. angulatus*.

7. **Glyphonyx angulatus.** (Tab. XXIII. figg. 28; 28 *a*, underside of prothorax.)

Somewhat fusiform, narrow, convex, shining; black, the prothorax sometimes piceous, the anterior and hind angles of the latter, the antennæ and legs testaceous; the elytra testaceous, with a sutural stripe, widening anteriorly into a large triangular scutellar patch, and an oblique mark on the outer part of the disc about the middle, or the sides at this part, black; thickly clothed with yellowish-cinereous pubescence. Head thickly, finely punctate; front with the reflexed margins meeting at an obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax, joint 3 shorter than 2. Prothorax strongly transverse, the sides rounded anteriorly and converging and sinuous behind; the hind angles very narrowly and acutely produced, strongly divergent, and somewhat incurved at the tip; the lateral carina extending forwards to the middle, the inferior marginal carina widely separated from it anteriorly, and obliterated behind; the surface finely, sparsely punctate; the basal plicæ indistinct. Elytra three times the length of the prothorax, and much wider than it, rapidly narrowing from the basal third, and somewhat pointed behind; punctate-striate, the interstices feebly convex and sparsely punctured; epipleuræ conspicuously angulate opposite the hind coxæ, and hollowed for the reception of the apices of the hind femora. Prosternum and propleuræ with widely scattered very fine punctures, the propleuræ concave and smooth behind; metasternum sparsely, the abdomen more closely, punctate, the sides of the metasternum with coarser punctures; prosternal process acuminate, margined to the tip. Posterior coxal plates slightly dilated in their inner third.

*Var.* The elytra with the suture only black.

Length $3\frac{1}{4}$–4, breadth 1–$1\frac{1}{8}$ millim.

*Hab.* British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Sinanja in Vera Paz (*Champion*).

Five examples of the type and one of the variety, the latter being from British Honduras. This small species, in its typical form, may be readily identified by its peculiar coloration, as well as by the partial obliteration of the inferior marginal carina of the thorax and the conspicuously angulate elytral epipleuræ. This last-mentioned character, which is visible from above, gives the elytra the appearance of being gradually widened in their basal third. The insect is closely allied to *G. brevicollis*; but it is smaller and less robust, the thorax is relatively narrower and more constricted behind, and the elytra usually have an oblique mark on the middle of the disc, as well as the suture, black.

8. **Glyphonyx propinquus.** (Tab. XXIII. fig. 24, underside of prothorax.)

Moderately elongate, narrow, shining; piceous or brown, the hind angles of the prothorax obscure testaceous, the suture of the elytra sometimes very narrowly infuscate, the antennæ and legs testaceous; thickly clothed with yellowish-cinereous pubescence. Head closely, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ nearly two-fifths of the length of the body in

the male, shorter in the female, joints 2 and 3 equal in length. Prothorax a little broader than long, the sides rounded in front and slightly sinuate behind; the hind angles acutely produced and feebly or moderately divergent; the lateral carina extending to near the apex, a little shorter in some specimens, the inferior marginal carina gradually diverging from it and feebly sinuate behind; the surface thickly, finely punctate, a narrow space down the middle of the basal half impunctate; the basal plicæ well defined. Elytra two and two-thirds longer than the prothorax, and slightly wider than it, narrowing from the basal third, and somewhat pointed behind; coarsely punctate-striate, the interstices convex and rugulosely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with widely scattered fine punctures, the propleuræ smooth behind; metasternum and abdomen closely, finely punctate; prosternal process acuminate, margined to the tip. Posterior coxal plates moderately dilated in their inner third.

Length $4\frac{1}{8}$–$5\frac{1}{4}$, breadth $1\frac{1}{8}$–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Tepetlapa in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, Dueñas (*Champion*).

Seven specimens, six of which are from Mexico. Easily separable from *G. quadraticollis* and its allies by the more approximate thoracic carinæ, the inferior marginal carina in the present species gradually diverging from the lateral one, less distant from it in front, and more feebly sinuate behind. From the North-American *G. recticollis* (Say) it may be distinguished by the longer lateral carina of the thorax, the more coarsely punctate-striate elytra, and the more uniform coloration; the thoracic carinæ are also more approximate.

### 9. Glyphonyx depressus.

Moderately elongate, narrow, depressed, shining, thickly pubescent; brownish-testaceous, the legs testaceous. Head closely, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending slightly beyond the hind angles of the prothorax, joint 3 shorter than 2. Prothorax nearly as long as broad, subquadrate, the sides slightly rounded at the apex; the hind angles acutely produced, not divergent; the lateral carina short, not reaching the middle, the inferior marginal carina gradually diverging from it and feebly sinuate behind; the surface somewhat closely, finely punctate; the basal plicæ very fine. Elytra two and one-half times the length of the prothorax, and of the same width, gradually narrowing from about the basal third, and somewhat pointed behind; deeply punctate-striate, the interstices rather convex and closely, rugulosely punctured; epipleuræ subangulate opposite the hind coxæ. Prosternum and propleuræ very sparsely, the metasternum and abdomen closely, finely punctate, the sides of the metasternum with coarser punctures; prosternal process acuminate, margined to near the tip, the very narrow apical portion with a row of punctures down the centre. Posterior coxal plates feebly dilated in their inner third.

Length $4\frac{1}{2}$, breadth $1\frac{1}{4}$ millim.

*Hab.* Mexico, Jalapa (*Höge*).

One specimen, probably a male. This insect resembles the pallid form of *G. quadraticollis*; but it is more flattened above, the elytra are relatively shorter, the lateral carina of the thorax is short, and the inferior marginal carina gradually divergent from it. In this last-mentioned character *G. depressus* agrees with *G. propinquus*, from which it may be separated by the short lateral carina of the thorax, the shorter elytra, &c. From the North-American *G. testaceus* (Melsh.), a specimen of which has been communicated by Dr. Horn, it differs in its longer thorax and more sparsely and

finely punctured propleuræ, as well as in having the prosternal process not grooved to the apex, &c.

### 10. **Glyphonyx tenuis.**

Elongate, very narrow, shining; black, the elytra sometimes testaceous, with the suture broadly, and in one specimen the margins also, black, or with an indeterminate brownish stripe extending from the shoulders downwards; the antennæ brown, with the basal three joints testaceous, the legs flavous; somewhat thickly clothed with yellowish-cinereous pubescence. Head sparsely, finely punctate; the strongly reflexed margins of the front meeting at an acute angle in the centre; antennæ extending to far beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 shorter than 2. Prothorax about as long as broad, the sides rounded in front and feebly sinuate behind; the hind angles acutely produced, slightly divergent; the lateral carina short, not reaching the middle, the inferior marginal carina feebly sinuate behind, and gradually diverging from it; the surface sparsely, finely punctate; the basal plicæ distinct. Elytra about two and three-fourths longer than the prothorax, and of the same width, narrowing from the basal third, and somewhat pointed behind; coarsely punctate-striate, the interstices almost flat and sparsely rugulosely punctate. Prosternum and propleuræ with scattered punctures, those on the propleuræ coarse; metasternum and abdomen thickly, finely punctate; prosternal process acuminate, margined to the tip. Posterior coxal plates feebly dilated in their inner third.

Length 4, breadth 1–1$\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith*).

Four specimens—two of these have the elytra testaceous, with the suture broadly infuscate, one has a brownish stripe on the elytra extending from the shoulder downwards, and the other is black, with the humeri slightly paler. This species chiefly differs from those with an acuminate and completely margined prosternal process in its very narrow, elongate shape and elongate thorax; the lateral carina of the thorax does not extend to the middle, and the inferior marginal carina is feebly sinuate behind.

### 11. **Glyphonyx nigritus.** (Tab. XXIII. fig. 25, underside of prothorax.)

*Glyphonyx nigritus*, Cand. Compt. Rend. Soc. Ent. Belg. 1878, p. cxcvi (Elat. Nouv. ii. p. 52)[1].

*Hab.* Mexico, Puebla, Cordova (*Sallé*), Motzorongo in Vera Cruz (*Flohr*), Atoyac in Vera Cruz (*H. H. Smith*), Teapa in Tabasco [1] (*Sallé, coll. Janson*); Guatemala, Chiacam and Chacoj in Vera Paz (*Champion*).

Apparently a common insect in the Mexican State of Vera Cruz, whence we have received a long series of specimens. This very small species is somewhat fusiform in shape, and black or piceous in colour, with the antennæ and legs testaceous, the surface thickly clothed with yellowish-cinereous pubescence; the thorax is convex, arcuately narrowed in front. It may be separated from all the allied forms by the prosternal process being very little narrowed behind, rounded at the tip, and completely margined, with the median portion behind the coxæ dull and rugulose. The lateral carina of the thorax extends from the tip of the hind angle to near the apex *; the inferior marginal carina is widely separated from it anteriorly, and sinuous behind. The

* Described as "angulis posticis haud carinatis."

prosternum and propleuræ have a few fine widely scattered punctures. The feebly reflexed margins of the front meet at an obtuse angle in the centre. The insect varies from 3–4½ millim. in length.

The specimens in the Sallé collection are labelled *Agriotes infimus*, Deyr. (=*mexicanus*, Chevr.), and one of those in the Janson collection (from that of Candèze) is ticketed *G. flavipes*, Cand. We are indebted to Dr. Candèze for the loan of the type.

12. **Glyphonyx mimeticus.** (Tab. XXIII. figg. 30, 30 *a*, ♀; 30 *b*, underside of prothorax.)

*Glyphonyx mimeticus*, Horn, Trans. Am. Ent. Soc. v. p. 23 (1874)[1].

*Hab.* North America, Alabama and Texas[1] (*coll. Janson*).—Mexico (*coll. Janson*, *ex Laferté*), Vera Cruz (*Sallé*), Teapa (*coll. Janson*).

Fifteen specimens of this species are before me, eleven of which are from Mexico. This species, which, as Dr. Horn remarks, has very much the facies of a *Horistonotus* or *Esthesopus*, is of a testaceous or rufo-testaceous colour, with the suture of the elytra sometimes infuscate. The front is triangular and sharply margined. The third joint of the antennæ is slightly longer than the second. The thorax is as long as broad, with the lateral carina extending forwards to about the middle, and the inferior marginal carina sinuous behind. The elytra are more or less distinctly carinate near the sides at the apex, the carinæ arising from the seventh or eighth interstices and sinuously converging posteriorly, the apices appearing narrow and separately rounded. The long prosternal process is compressed behind the coxæ, appearing Y-shaped as viewed from beneath, the triangular intercoxal portion being margined, and the posterior portion reduced to a thin lamina. The hind coxal plates are moderately dilated in their inner third.

13. **Glyphonyx laticollis.** (Tab. XXIII. fig. 29.)

Moderately elongate, subfusiform, shining; brownish-testaceous, the legs testaceous, somewhat thickly pubescent. Head finely and rather sparsely punctured, the punctuation becoming denser behind; front broad, the margins meeting at an obtuse angle in the centre; antennæ about reaching the hind angles of the prothorax, joint 3 shorter than 2. Prothorax much broader than long, rapidly narrowing from about the apical third, almost parallel behind; the hind angles acutely produced, not divergent; the lateral carina sharp and extending to near the apex, the inferior marginal carina widely separated from it anteriorly and strongly sinuous behind; the surface sparsely punctate, the punctuation becoming closer and coarser towards the apex, and very fine and diffuse towards the base; the basal plicæ long and well-defined. Elytra three times the length of the prothorax, and narrower than it, a little rounded at the sides, narrowing from the base, somewhat pointed behind; punctate-striate, the interstices flat and sparsely punctured. Prosternum and propleuræ with a few fine widely scattered punctures; metasternum and abdomen closely, finely punctate, the sides of the metasternum with coarse punctures; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length 5½, breadth 1½ millim.

*Hab.* Guatemala, San Gerónimo in Vera Paz (*Champion*).

One example. This species somewhat resembles *G. cuneatus*, but it has the thorax relatively broader, and much more narrowed in front, the elytra more rapidly narrowing from the base, and the prosternal process Y-shaped.

### 14. **Glyphonyx flohri.**

Short and narrow, shining, thickly pubescent; testaceous, the suture slightly infuscate in one example, the under surface rufo-testaceous. Head sparsely, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to considerably beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 shorter than 2. Prothorax short, transversely quadrate, a little rounded at the sides in front; the hind angles acutely produced, not divergent; the lateral carina extending almost to the apex, the inferior marginal carina widely diverging from it and strongly sinuate behind; the surface sparsely, very finely punctate; the basal plicæ very fine. Elytra three times the length of the prothorax, narrowing from the base; coarsely punctate-striate, the interstices convex and finely punctured. Prosternum and propleuræ with a few very widely scattered fine punctures; metasternum and abdomen sparsely punctured, the punctures on the sides of the metasternum and first ventral segment very coarse, the others fine; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $2\frac{2}{3}$–3, breadth 1 millim. (♂ ♀.)

*Hab.* Mexico, Motzorongo in Vera Cruz (*Flohr*).

One pair. This very small species resembles *G. cuneatus* in shape; but it has the thorax shorter, the elytra more coarsely punctate-striate and narrowing from the base, the metasternum and abdomen more sparsely punctured, and the prosternal process Y-shaped. From *G. teapensis* and *G. cruciellus* it may be easily identified by its more cuneiform shape, &c. I dedicate this insect to the late Julius Flohr, who for many years has devoted nearly the whole of his time to the investigation of the coleopterous fauna of Mexico.

### 15. **Glyphonyx ebeninus.** (Tab. XXIII. fig. 26, underside of prothorax.)

Rather short, very narrow, subfusiform, shining; deep black, the basal three or four joints of the antennæ and the legs flavo-testaceous; sparsely clothed with fine yellowish-cinereous pubescence. Head sparsely, finely punctate; the reflexed margins of the front meeting at a very obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 shorter than 2. Prothorax slightly broader than long, the sides rounded and converging in front, and feebly sinuate behind; the hind angles acutely produced and slightly divergent; the lateral carina sharply defined and extending forwards to about the middle, the inferior marginal carina widely diverging from it and strongly sinuate behind; the surface very sparsely, finely punctate; the basal plicæ long and well-defined. Elytra about two and two-thirds longer than the prothorax, and of the same width in front, rapidly narrowing from a little below the base, and somewhat pointed at the apex; punctate-striate, the interstices flat and sparsely, minutely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with a few fine, very widely scattered punctures; metasternum and abdomen sparsely, finely punctate; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $2\frac{4}{5}$–$3\frac{1}{2}$, breadth $\frac{4}{5}$–1 millim. (♂ ♀.)

*Hab.* Guatemala, Chiacam in Vera Paz (*Champion*).

Twelve specimens. Easily recognizable by its narrow, subfusiform shape, deep black colour, with the basal joints of the antennæ and the legs flavous, the very sparsely and

finely punctured thorax, and the Y-shaped prosternal process. *G. ebeninus* resembles *G. nigritus*, but it is narrower and more fusiform, the antennæ are longer and have the basal joints only pale, the prosternal process is very differently formed, &c.

### 16. **Glyphonyx præcox.**

*Adrastus præcox*, Erichs. Zeitschr. für Ent. iii. p. 121 (1841)[1].

*Hab.* MEXICO (*coll. Janson*), La Noria in Sinaloa, Chilpancingo in Guerrero, Yautepec in Morelos, Jalapa[1] (*Höge*), Puebla (*Sallé*); GUATEMALA, Zapote, San Gerónimo (*Champion*).

The specimens I refer to *G. præcox*, the description of which appears to have been overlooked by Candèze, may be separated from *G. quadraticollis* in all its varieties by the more abruptly acuminate prosternal process and the more transverse thorax, as well as by the entirely testaceous colour and smaller size. From the pale unicolorous variety of *G. cruciellus*, and from *G. teapensis* also, the more divergent thoracic carinæ will distinguish it. The antennæ are elongate in the male, much shorter in the female. The thorax is transversely quadrate in the male, rounded at the sides anteriorly and apparently more transverse in the female; the lateral carina extends forwards to about the middle, the inferior marginal carina widely diverging from it anteriorly and sinuate behind; the punctuation is sparse and fine. The elytra are narrowed from about the basal third, and somewhat pointed behind. The prosternal process is Y-shaped, the triangular intercoxal portion being margined and the slender apical part quite smooth.

There are three specimens of this species from "Louisiana" in the Janson collection mixed with the series of *G. testaceus*, from which it may be easily known by the form of the prosternal process, &c.; the locality requires confirmation.

### 17. **Glyphonyx quadrinotatus.** (Tab. XXIII. fig. 31.)

Narrow, convex, shining; piceous, the prothorax with the anterior margin and the tips of the hind angles, the elytra with a subtriangular, posteriorly excised spot immediately below the shoulder, and a large patch at the apex, the latter nearly reaching the suture, the legs, and antennæ testaceous, the epipleuræ brown; thickly clothed with yellowish-cinereous pubescence. Head thickly, finely punctate; front acuminate; antennæ extending to far beyond the hind angles of the prothorax, joint 3 shorter than 2. Prothorax strongly transverse, slightly narrowed in front, almost parallel behind; the hind angles acutely produced, not divergent; the lateral carina extending forwards to about the middle, the inferior marginal carina widely separated from it anteriorly, and strongly sinuous behind; the surface very finely, somewhat sparsely punctate; the basal plicæ distinct. Elytra three times the length of the prothorax, and slightly wider than it, narrowing from about the middle, and somewhat pointed behind; punctate-striate, the interstices almost flat and sparsely punctured. Prosternum and propleuræ with widely scattered fine punctures; metasternum sparsely and finely, the abdomen more closely, punctate; prosternal process Y-shaped, the triangular intercoxal portion obsoletely margined. Posterior coxal plates slightly dilated in their inner third.

Length $3\frac{1}{8}$, breadth 1 millim.

*Hab.* GUATEMALA, Cerro Zunil (*Champion*).

One specimen. Easily separable from our other species by the four-spotted elytra. The post-humeral spot resembles an oblique, inverted V. *G. quadrinotatus* is nearest allied to *G. fasciatus*, but easily separable therefrom by the non-divergent hind angles of the thorax.

### 18. **Glyphonyx fasciatus.**

Moderately elongate, very narrow, shining; black, the elytra testaceous, with the suture and a broad, transverse, indeterminate, ante-median fascia fuscous, the antennæ pitchy-brown, with the two basal joints testaceous, the legs testaceous; thickly clothed with yellowish-cinereous pubescence. Head sparsely, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax, joint 3 much shorter than 2. Prothorax transverse, the sides gradually and arcuately converging from the middle forwards and feebly sinuate behind; the hind angles very long, slender, and strongly divergent, slightly incurved at the tip; the lateral carina about reaching the middle, the inferior marginal carina widely separated from it anteriorly, and sinuate behind; the surface finely and rather sparsely punctate; the basal plicæ very indistinct. Elytra three and one-half times longer than the prothorax, and much wider than it, rounded at the sides, narrowing from the middle, pointed behind; deeply and coarsely punctate-striate, the interstices convex and sparsely punctured. Prosternum and propleuræ with widely scattered fine punctures; metasternum and abdomen finely and rather closely punctate; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length 3, breadth $\frac{9}{10}$ millim.

*Hab.* GUATEMALA, Purula in Vera Paz (*Champion*).

One specimen only, no doubt a male, of this peculiar little species has been obtained. It is not very closely allied to any of the others here described. From *G. angulatus* it may be separated by the relatively narrower thorax, the more oval elytra, the differently-formed prosternal process, &c.; and from *G. cruciellus* by the much narrower thorax, with strongly divergent hind angles, the more oval elytra, &c.

### 19. **Glyphonyx cinctus.** (Tab. XXIII. fig. 32.)

Moderately elongate, rather robust, shining; rufo-testaceous or testaceous, the elytra with the suture and a broad transverse median fascia—in some specimens extending to the outer margin, and in others reduced to a common rhomboidal mark—black or piceous, the sutural stripe sometimes dilated into a triangular patch at the base; thickly clothed with yellowish-cinereous pubescence. Head closely, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ about reaching the hind angles of the prothorax in the female, a little longer in the male, joints 2 and 3 subequal in length. Prothorax broader than long, the sides rounded in front and almost parallel behind; the hind angles acutely produced, not divergent; the lateral carina extending forwards to about the middle, the inferior marginal carina becoming widely separated from it anteriorly and sinuate behind; the surface somewhat closely, finely punctate; the basal plicæ well defined. Elytra two and two-thirds longer than the prothorax, and of the same width, gradually narrowing from the basal third, obtuse behind; deeply punctate-striate, the interstices almost flat and rugulosely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ sparsely punctate, the punctures on the propleuræ coarse; metasternum and abdomen closely, finely punctate, the punctures on the sides of the metasternum coarser; prosternal process Y-shaped, margined to beyond the coxæ. Posterior coxal plates feebly dilated in their inner third.

Length 3–4$\frac{1}{4}$, breadth 1–1$\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* MEXICO, Soledad in Vera Cruz (*Sallé*), Teapa in Tabasco (*coll. Janson*); BRITISH HONDURAS, Belize (*Blancaneaux*).

Six examples, those from Belize (probably all females) being considerably smaller and paler than the others. Broader and more robust than *G. cruciellus*, the thorax a little more coarsely punctured, the median fascia of the elytra better defined in the well-marked specimens, the prosternal process more gradually acuminate, with the smooth posterior portion shorter. The Mexican specimens are rufo-testaceous, with the elytra testaceous, the dark markings being well-defined in two of them; those from Belize have a common rhomboidal dark mark on the elytra, in addition to a narrow sutural stripe. A specimen from Soledad is figured.

## 20. Glyphonyx cruciellus.

*Adrastus cruciellus*, Erichs. Zeitschr. für Ent. iii. p. 120 [1].

*Glyphonyx cruciellus*, Cand. Monogr. Elat. iv. p. 456 [2].

Moderately elongate, narrow, shining, finely pubescent; testaceous, the disc of the prothorax and the metasternum slightly infuscate in some specimens, the elytra sometimes with the suture, or the suture and a transverse median fascia, infuscate. Head thickly, finely punctate; the reflexed margins of the front meeting at an obtuse angle in the centre; antennæ extending to far beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 slightly shorter than 2. Prothorax strongly transverse, the sides rounded in front and feebly sinuate behind; the hind angles acutely produced and slightly divergent; the lateral carina extending forwards to beyond the middle, the inferior marginal carina gradually diverging from it and feebly sinuate behind; the surface sparsely, finely punctate; the basal plicæ fine. Elytra three times the length of the prothorax, and of the same width, narrowing from the basal third, and somewhat pointed behind; rather coarsely punctate-striate, the interstices feebly convex and finely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with widely-scattered rather coarse punctures; metasternum and abdomen somewhat thickly, finely punctate, the sides of the metasternum with coarser punctures; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $2\frac{3}{4}$-4, breadth $\frac{7}{8}$-$1\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* Mexico [1 2]; Guatemala, Panzos and Cubilguitz in Vera Paz, Zapote (*Champion*); Panama, Volcan de Chiriqui (*Champion*). — Colombia [2]; Venezuela, Cumana (*coll. Janson, ex Laferté*).

Smaller, narrower, and less robust than *G. cinctus*; the thorax smoother, and with the inferior marginal carina more gradually divergent from the lateral one; the prosternal process more abruptly acuminate; the antennæ more elongate. From *G. præcox* it may be separated by the less divergent thoracic carinæ; the apparently less acuminate front (Erichson states [1] that *G. cruciellus* is easily separated from *G. præcox* by the truncate angle of the anterior frontal margin) is an illusory character. The different forms occur at Zapote, and al o in Venezuela. The Chiriqui specimens are entirely testaceous. I have not seen an example from Mexico.

## 21. Glyphonyx teapensis.

Short and rather narrow, shining; varying in colour from piceous to clear rufo- or flavo-testaceous, the antennæ and legs testaceous; thickly clothed with yellowish-cinereous pubescence. Head finely, rather sparsely punctate; the reflexed margins of the front meeting at a somewhat acute angle in the centre; antennæ extending to considerably beyond the hind angles of the prothorax in the male, shorter in the female, joints 2 and 3 subequal in length. Prothorax strongly transverse, the sides rounded and converging

anteriorly and sinuate and slightly converging behind ; the hind angles acutely produced and feebly divergent; the lateral carina about reaching the middle, the inferior marginal carina gradually diverging from it and scarcely sinuate behind ; the surface sparsely, finely punctate; the basal plicæ very fine. Elytra three times the length of the prothorax, and a little wider than it, gradually narrowing from the basal third, and somewhat pointed at the apex ; finely punctate-striate, the interstices flat and finely punctured; epipleuræ angulate opposite the hind coxæ. Prosternum and propleuræ with widely scattered rather coarse punctures ; metasternum (the sides included) and abdomen closely, finely punctate ; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $2\frac{3}{4}$–$3\frac{1}{8}$, breadth 1 millim. (♂ ♀.)

*Hab.* Mexico, Teapa in Tabasco (*coll. Janson, Höge, H. H. Smith*).

Sent in numbers from Teapa. Less elongate than *G. cruciellus* and *G. præcox*, and of the size of the smallest examples of those species, the elytra more finely punctate-striate, and more gradually narrowed behind, especially in the females. The colour is even more variable than in *G. cruciellus*, but there is no trace in any of the specimens of a sutural stripe or median fascia on the elytra.

### 22. **Glyphonyx parallelus.** (Tab. XXIII. fig. 27, underside of prothorax.)

Oblong-oval, convex, narrow, shining ; black or piceous, the elytra sometimes brown or brown with the suture darker, the antennæ and legs testaceous ; thickly clothed with yellowish-cinereous pubescence. Head closely, rather coarsely punctate ; the reflexed margins of the front meeting at an obtuse angle in the centre ; antennæ about reaching the hind angles of the prothorax, joint 3 slightly shorter than 2. Prothorax a little broader than long, the sides subparallel behind and rounded in front ; the hind angles acutely produced, not divergent ; the lateral carina extending forwards to the middle, the inferior marginal carina gradually diverging from it and feebly sinuate behind ; the surface thickly, somewhat coarsely punctate, the punctuation becoming finer and more diffuse towards the base ; the basal plicæ long and well-defined. Elytra about two and three-fourths longer than the prothorax, and of the same width, gradually narrowing from the basal third, rather obtuse behind ; punctate-striate, the interstices flat and rugosely punctured. Prosternum and propleuræ with widely scattered fine punctures ; metasternum and abdomen thickly, finely punctate; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $3\frac{1}{2}$–$4\frac{1}{2}$, breadth 1–$1\frac{1}{3}$ millim. (♂ ♀.)

*Hab.* Mexico, Guanajuato (*Sallé*), Chilpancingo in Guerrero (*Höge, H. H. Smith*), Amula in Guerrero (*H. H. Smith*).

Sent in abundance from Chilpancingo in Western Mexico. This small species chiefly differs from the numerous similarly-coloured forms in its more parallel shape, the rather obtuse apices of the elytra, and the Y-shaped prosternal process; the last-mentioned character separates it from *G. quadraticollis* and its allies.

### 23. **Glyphonyx minimus.**

Rather short, oblong-oval, narrow, shining ; black or piceous, sometimes with the hind angles of the prothorax testaceous and the elytra brownish, the antennæ and legs testaceous, the antennæ sometimes with joints 4–11 brownish ; thickly clothed with yellowish-cinereous pubescence. Head thickly punctured ; the reflexed margins of the front meeting at an acute angle in the centre ; antennæ extending to a little beyond the hind angles of the prothorax in the male, shorter in the female, joint 3 shorter than 2. Prothorax strongly transverse, the sides rounded in front and parallel or feebly sinuate behind ; the hind

angles acutely produced, not or feebly divergent; the lateral carina excessively fine (scarcely visible till the pubescence is removed and the insect is viewed from the side) and extending to a little beyond the middle, the inferior marginal carina very gradually diverging from it; the surface finely and rather sparsely punctate; the basal plicæ indistinct. Elytra about three times the length of the prothorax, and of the same width, narrowing from the basal third, and somewhat pointed behind; punctate-striate, the interstices flat and sparsely, rugulosely punctate. Prosternum and propleuræ with a few widely scattered fine punctures; metasternum and abdomen thickly, finely punctate; prosternal process Y-shaped, the triangular intercoxal portion margined. Posterior coxal plates feebly dilated in their inner third.

Length $2\frac{2}{5}$–3, breadth $\frac{3}{4}$–$\frac{9}{10}$ millim. (♂ ♀.)

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Found in abundance in Chiriqui. This is one of the smallest of the Central-American species. It is allied to *G. ebeninus*, but is less elongate and not so black; the thorax is much more transverse and more closely punctured, and has the lateral carina so fine as to be scarcely visible, this carina being less divergent from the inferior one than in *G. ebeninus*. From *G. nigritus* it may be known by the very different form of the prosternal process, as well as by its smaller size, the less convex and shorter thorax, &c.

## MICROGLYPHONYX.

Head deeply sunk into the prothorax, convex; front acuminate, the margins reflexed and meeting at an acute angle in the centre immediately above the labrum; the mouth placed beneath; antennæ with the basal joint stout, nearly as long as joints 2–4 united, 3 much smaller than 2, 4–10 short and somewhat moniliform, 11 oval, acuminate at the tip; prothorax not margined at the sides, narrowed in front and behind, with long, acute, posteriorly produced hind angles and fine basal plicæ; scutellum rather large, oval, flat; elytra fitting closely to the base of the prothorax, oval, the humeri very oblique, the epipleuræ rather broad in front and strongly sinuous and abruptly narrowed opposite the hind coxæ; prosternum broad, convex, with a prominent chin-piece and a Y-shaped process behind, the intercoxal portion of the latter not margined; prosternal sutures double and excavate in front, becoming coalescent about the middle; mesosternum declivous, the borders of the cavity not raised; metasternum very short; posterior coxal plates slightly dilated in the inner third, becoming excessively narrow outwards; basal joint of the hind tarsi a little longer than the following two joints united; fourth tarsal joint lamellate; claws pectinate; body apterous.

The minute Elaterid from which the above characters are taken is a close ally of *Glyphonyx*; but differs from it in the complete obliteration of the lateral and inferior marginal carinæ of the thorax, the posteriorly coalescent prosternal sutures, the more moniliform outer joints of the antennæ, the very short metasternum, and the apterous body. The prosternal process is formed as in the third section of *Glyphonyx*, except that the intercoxal portion is not margined. The thorax and elytra are both narrowed towards the base. The insect is unknown to Dr. Candèze. Our specimens were obtained at a high elevation on the Volcan de Chiriqui, by brushing long grass in a bamboo-thicket.

1. **Microglyphonyx coarctatus.** (Tab. XXIII. figg. 33; 33 *a*, underside of prothorax.)

Rather short, narrow, shining; piceous, with the anterior margin and the hind angles or base of the prothorax, the elytra, the prosternum, and the apex of the abdomen testaceous (the elytra sometimes with the suture and a patch at the sides slightly darker), or entirely testaceous; the antennæ brown, with the two basal joints testaceous, the legs flavo-testaceous; thickly clothed with pale yellowish-cinereous pubescence. Head finely and rather closely punctate; antennæ fully half the length of the body in the male, a little shorter in the female. Prothorax strongly transverse, convex in front, broadest before the middle, constricted and slightly sinuate at the sides behind, the latter rounded in front, the hind angles not divergent; the surface closely, finely punctate. Elytra about two and one-half times the length of the prothorax, and at the middle wider than it, oval, convex; coarsely punctate-striate, the interstices convex and very sparsely punctured. Prosternum and propleuræ sparsely, coarsely punctate, the rest of the under surface more closely and more finely punctured.

Length 2–2½, breadth ¾–⅞ millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

Nine examples.

## Group **CAMPYLINI.**

### CYLINDRODERUS.

*Cylindroderus,* Eschscholtz, in Silb. Rev. Ent. iv. tab. (1836); Candèze, Monogr. Elat. iv. p. 503.

An American genus containing eight named species, one of which is from Mexico, the others being from various parts of the South-American continent; an additional species from Guatemala is described below.

1. **Cylindroderus mexicanus.**

*Cylindroderus mexicanus,* Cand. Monogr. Elat. iv. p. 506 [1].

*Hab.* MEXICO, Cordova, Toxpam, Vera Cruz (*Sallé* [1]), Teapa in Tabasco (*H. H. Smith*).

The type of this species is a male. The female has much shorter antennæ, and the thorax broader behind the middle, with the marginal carina distinct to near the apex. The single specimen from Vera Cruz has the head and thorax ferruginous and the elytra piceous. The example from Cordova was placed with *Aptopus campylinus* in the Sallé collection.

2. **Cylindroderus cribricollis.** (Tab. XXIV. fig. 2, ♂.)

♂. Elongate, narrow, rather dull; reddish-brown or brownish-testaceous, the base of the head and the suture of the elytra sometimes infuscate, the antennæ brown or ferruginous, the legs brownish, with the tibiæ usually infuscate, the metasternum and abdomen piceous or fusco-ferruginous; somewhat thickly clothed with long fulvo-cinereous hairs, those on the upper surface semierect. Head densely and very coarsely umbilicate-punctate; antennæ nearly two-thirds the length of the body, joints 2 and 3 very short, subequal, the two together not so long as 4, the following joints very elongate and considerably widened. Prothorax as long as broad, subquadrate, the sides feebly sinuate behind, not margined; the hind angles moderately produced and slightly divergent, carinate laterally; the surface very coarsely, closely umbilicate-punctate, with a more or less distinct narrow space down the middle impunctate. Elytra nearly

four times the length of the prothorax, and much wider than it, very gradually narrowing from the base; coarsely and deeply punctate-striate, the interstices not or very little wider than the punctures of the striæ, convex (flatter in some specimens), and somewhat thickly punctured. Prosternum and propleuræ very coarsely, the metasternum and abdomen rather finely, punctate. Legs elongate, the intermediate and hind pairs with the tarsi considerably longer than the tibiæ.

Length 6–6½, breadth 1½–1⅗ millim.

*Hab.* GUATEMALA, El Tumbador, Las Mercedes, Cerro Zunil (*Champion*).

Five specimens, all from the Pacific slope, from elevations between 2500 and 4000 feet. Paler and a little more elongate than *C. mexicanus*, with the thorax more quadrate, the punctures of the elytral striæ much coarser, and the tarsi relatively longer.

## OCTINODES.

*Octinodes*, Candèze, Monogr. Elat. iv. p. 487 (1863).

The three known species of this genus are all from Tropical South America; a fourth is now added from the State of Panama.

### 1. **Octinodes carinatus.** (Tab. XXIV. fig. 1, ♂.)

♂. Elongate, rather narrow, scarcely shining; fulvo-testaceous, the head in front, the mandibles, and scutellum piceous, the elytra testaceous, the metasternum, abdomen, eyes, and antennæ black, the legs piceous, with the femora fusco-testaceous; above thickly clothed with long, semierect fulvous pubescence, beneath with decumbent fulvo-cinereous hairs. Head swollen on each side above the point of insertion of the antennæ, very coarsely, confluently punctate, the eyes large and prominent; antennæ with the fourth and following joints each furnished with a very long, slender ramus—that on the fourth and last joints shorter than the others, which are excessively elongate,—the rami all thickly clothed with long fine hairs. Prothorax subquadrate, slightly narrowing forwards; the hind angles very long and strongly divergent, obsoletely carinate at the tip; the surface coarsely, closely punctate, the punctures here and there confluent, obsoletely canaliculate. Scutellum closely, finely punctate, with a smooth raised line down the centre. Elytra nearly four times the length of the prothorax, and much wider than it, parallel to a little beyond the middle; coarsely punctate-striate, the interstices convex and closely punctured. Prosternum and propleuræ sparsely, the metasternum and abdomen closely, rather coarsely punctate, the inner part of the propleuræ smooth. Legs rather slender.

Length 10, breadth 2½ millim.

*Hab.* PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

One example. Closely allied to *O. capillatus*, Cand. (the type of which is contained in the Janson collection), from Colombia and Venezuela, which is sometimes similarly coloured; but differing from it in the carinate scutellum, the more slender limbs, and the shorter ramus on the fourth antennal joint, as well as in its smaller size and narrower shape.

# SUPPLEMENT.

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## HEMIRHIPUS (p. 271).

### 1 (A). **Hemirhipus ferrugineus.** (Tab. XXIV. fig. 3.)

*Hemirhipus ferrugineus*, Cand. Elat. Nouv. v. p. 15 (1893) [1].

*Hab.* GUATEMALA [1].

Dr. Candèze has kindly forwarded the type of this insect for examination. It is extremely like *H. bimaculatus*, from which it differs in its larger size and much more elongate elytra, the latter with the third and fifth interstices broader than the others towards the apex; the type of *H. bimaculatus* is, no doubt, a male, and that of *H. ferrugineus* a female, the latter having the scutellum abnormally formed. *H. ferrugineus* itself is probably a variety of the Colombian *H. fairmairei*, Cand., with the black markings on the thorax reduced in size; it is recorded by Candèze himself in his 'Catalogue Méthodique' as from Central America.

The descriptions of *Hemirhipus ferrugineus* and *Chalcolepidius monachus* were not seen in time to enable me to insert the species in their proper places.

## CHALCOLEPIDIUS (p. 272).

### 7. **Chalcolepidius apacheanus.**

*Chalcolepidius apacheanus*, Casey, Ann. New York Acad. vi. p. 16 (1891) [1].
*Chalcolepidius webbi*, huj. op. p. 278, t. 11. fig. 23 (nec Lec.) [2].

*Hab.* NORTH AMERICA, Arizona [1].—MEXICO, Chihuahua city (*Höge* [2]).

Since my remarks on *C. webbi* were published we have received a beautiful male example of the species from Mr. Wickham, from Yuma, California; it has the apical joint of each tarsus, and the anterior and intermediate tibiæ ciliate *, as in the males of *C. lacordairei* &c. From a renewed examination of these specimens I am now convinced that the abraded Mexican females from Chihuahua referred by me to *C. webbi* really belong to *C. apacheanus*, Casey, and that the two insects are specifically distinct. The Mexican specimens, which vary from 28–37 millimetres in length, differ from *C. webbi* in the relatively longer thorax (in *C. apacheanus* it is described as one-fifth longer than wide), with the larger punctures on the anterior part coarser and more numerous, and the more deeply impressed head. The few remaining small scales on

* The words "except in *C. webbi*" should be erased from the Table on p. 273.

the dorsum are brownish-olivaceous, instead of dark blue, as described by Capt. Casey. It is possible that the Mexican specimens may prove to belong to yet another species, but in the absence of a typical *C. apacheanus* for comparison it is inadvisable to name it. Moreover, Capt. Casey has incorrectly identified the sex of the specimens he describes, and what he supposes to be the male is really the female. Many of the species of *Chalcolepidius* vary enormously in size, and also in the colour of the small scales on the dorsum; these characters are, as a rule, of little or no value in distinguishing the various forms.

### 8 (A). **Chalcolepidius monachus.**

*Chalcolepidius monachus,* Cand. Elat. Nouv. v. p. 16 (1893) [1].

*Hab.* MEXICO, Chihuahua [1].

The type of this insect (kindly lent by Dr. Candèze) is an abraded female. It is, in my opinion, a small varietal form of *C. lacordairei*, with the longitudinal rugæ of the thorax coarser than usual. The puncturing of the elytral striæ (which cannot be seen till the scales are removed, and is stated to be coarser in *C. monachus* than in *C. lacordairei*) is similar, and the brownish-olivaceous colour of the scales is of no importance, as we have eight specimens of *C. lacordairei* from Mexico with the scales thus coloured, as well as others in which they are greenish, instead of blue.

## SEMIOTUS (p. 287).

### 7 (A). **Semiotus carus.** (Tab. XXIV. fig. 4, ♂.)

*Semiotus carus,* Jans. Cist. Ent. iii. p. 34, t. 1. fig. 2 (♀) (1882) [1].

*Var.* The elytra with the sides from the basal fourth to the apex very broadly, and a rather broad sutural stripe, black.

*Semiotus antennalis,* Cand. Elat. Nouv. vi. p. 16 (1896) [2].

*Hab.* PANAMA, Veraguas [2].—ECUADOR, Chiguinda [1].

Of this interesting addition to the Central-American fauna Dr. Candèze has recently received a specimen from Dr. Staudinger. The Panama insect (♂), for the loan of which we are indebted to Dr. Candèze, and from which our figure is taken, merely differs from the types (♂ and ♀) of *S. carus* in having the black marginal stripe of the elytra more extended inwards.

## OISTUS (p. 292).

### 3. **Oistus suturalis.** (Tab. XXIV. fig. 5.)

Elongate, broad, robust, flattened above, shining, the elytra subopaque; head and antennæ black, the prothorax and scutellum rufo-ferruginous, the elytra black with a greenish lustre, with the suture to the first row of punctures and the exterior limb rufo-ferruginous, the under surface rufo-ferruginous, with the abdomen

in great part black, the legs piceous, the coxæ rufo-ferruginous; when fresh, probably with the upper surface densely clothed with short golden pubescence (most of which is rubbed off in the single specimen obtained), beneath with the sides densely, and the other parts sparsely, clothed with golden pubescence. Head densely, finely punctate, broadly depressed in front, the sides of the front appearing raised; antennæ extending beyond the hind angles of the prothorax, joint 3 twice as long as 2, 3 a little shorter and narrower than 4 (10 and 11 broken off). Prothorax trapezoidal, at the base nearly twice as broad as long, the sides slightly sinuate behind, the apex deeply emarginate on either side, the base trisinuate and very distinctly crenulate, the hind angles divergent; the surface densely, very minutely punctate, and with some scattered coarser punctures on the disc, a rather broad space down the centre (which appears slightly raised in front), and a small patch on either side of the disc before the middle midway between this and the lateral margin, impunctate. Scutellum densely, very minutely punctate. Elytra four and one-half times the length of the prothorax, and a little wider than its basal portion, subparallel to beyond the middle and narrowing thence to the apex, the apical margin slightly sinuate, with the sutural angles sharp; finely seriate-punctate, the punctures placed in shallow grooves, the interstices feebly convex and densely, very minutely punctate; the humeri and the base of the third interstice considerably swollen. Beneath sparsely, the propleuræ and sides of the metasternum closely, punctate, the punctures on the propleuræ exceedingly fine.

Length $13\frac{3}{4}$, breadth $4\frac{1}{2}$ millim.

*Hab.* Mexico, Cordova (*Sallé*).

One specimen, placed with the series of *Hypodesis sericea* in the Sallé collection, an insect somewhat closely resembling it in general appearance. *O. suturalis* may be at once separated from the two other known species of the genus by the short trapezoidal thorax and peculiar coloration.

## ATRACTOSOMUS (p. 297).

*Atractodes*, Candèze, Cat. Méthod. Elat. p. 63.

Dr. Candèze, in his 'Elatérides Nouveaux,' v. p. 72 (1893), has recorded a species of the genus, under the name of *A. illinitus*, as from "Yucatan": the reference to Yucatan, he informs me, is incorrect, the insect being from Merida, Venezuela.

## ANOPLISCHIOPSIS (p. 301).

**Anoplischiopsis lineatocollis** (p. 303). (Tab. XXIV. fig. 8, ♂.)

To the localities given, add:—Costa Rica (*coll. Janson*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

The description of this species was based upon a small, pallid, somewhat immature female example. Additional specimens have since been detected, and they differ greatly from the type in colour, and also in being more elongate. The four examples (♂ and ♀) from the Volcan de Chiriqui have the head, a median vitta on the thorax (narrowed in front and behind), and the tips of the hind angles, the scutellum, and a broad sutural stripe on the elytra (widening to a little beyond the middle, and narrowing again behind), as well as a narrow marginal stripe extending forwards to the middle, and the apex to a greater or less extent, black, the under surface also being black, with

the exception of the outer part of the propleuræ; the rest of the thorax is rufo-testaceous, and of the elytra testaceous or flavo-testaceous. The male has much longer antennæ than the female, with the joints 4–10 broadly and acutely triangular. These examples have the thorax sinuate at the sides behind, so that the long hind angles appear strongly divergent, and the elytral interstices feebly convex and sparsely punctured. The single specimen (a small male) from Costa Rica represents yet another variety. It has the black median vitta on the thorax still broader and the apical patch on the elytra occupying rather more than their posterior third, the suture thence to the base being broadly black. The largest of the additional specimens measures 10 millim. in length and $2\frac{2}{3}$ millim. in width. A male from the Volcan de Chiriqui is now figured.

5 (A). **Anoplischiopsis trinotatus.** (Tab. XXIV. fig. 9, ♀.)

Moderately elongate, rather broad, shining; the head black or ferruginous, the prothorax fulvo-testaceous, with a median vitta and an abbreviated marginal stripe black (the latter piceous in one specimen), the scutellum black, the elytra fulvo-testaceous, with a large spot on the outer part of the disc a little beyond the middle (not reaching the margin) and the apex black; the antennæ, legs, and under surface, the propleuræ excepted, black or piceous; somewhat thickly clothed with long, decumbent pubescence, which on the upper surface partakes of the ground-colour, that on the lower surface yellowish-cinereous. Head coarsely, closely punctate, the frontal carina flexed downwards in the middle and not very prominent; antennæ about reaching the hind angles of the prothorax, joint 3 a little longer than 2, the following joints moderately dilated, triangular. Prothorax about as long as broad, the sides gradually and arcuately converging from the basal third, sinuate behind; the hind angles strongly produced, acute, and slightly divergent, sharply carinate; the surface finely, sparsely punctate, deeply canaliculate behind. Elytra about two and four-fifths longer than the prothorax, gradually narrowing from the middle and conjointly rounded at the apex; finely punctate-striate, the interstices convex throughout and somewhat thickly punctured. Beneath finely, rather sparsely punctate, the propleuræ with widely scattered punctures.

Length $8\frac{2}{3}$, breadth $2\frac{2}{3}$ millim. (♀.)

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt*).

Two examples. Closely allied to *A. lineatocollis*, but broader and more parallel than the female of that species, with the sides of the thorax infuscate or marked with black, and the elytra very differently marked, the apex and a post-median spot on the outer part of the disc of each being black.

## ANOPLISCHIUS (p. 305).

**Anoplischius atractodes** (p. 309).

To the localities given, add:—GUATEMALA, Teleman in Vera Paz (*Champion*).

**Anoplischius mexicanus** (p. 309).

To the localities given, add:—GUATEMALA, Senahu in Vera Paz (*Champion*).

## MEGAPENTHES (p. 377).

### 6. Megapenthes bicostatus.

*Megapenthes bicarinatus*, huj. op. p. 380 (nec Lewis).

The name *bicostatus* is substituted for *bicarinatus*, the latter being preoccupied in the genus.

## ANCHASTOMORPHUS (p. 399).

### Anchastomorphus quadriguttatus (p. 401).

To the localities given, add:—MEXICO, Yucatan (*Pilate, in coll. Janson*).

There is a specimen of the black variety of this species in the Janson collection labelled *Oophorus minutus*, Pilate; it appears to have been examined by Dr. Candèze and determined by him as *Glyphonyx* sp.? I have already alluded to the extremely close superficial resemblance of this genus to *Anchastomorphus*.

## AGRYPNELLA (p. 414).

*Heterostethus*, Schwarz, Deutsche ent. Zeitschr. 1896, p. 147.

### Agrypnella squamifera (p. 415).

*Heterostethus pictus*, Schwarz, loc. cit. p. 147.

This species has been recently described by Schwarz upon specimens from Paraguay; his name must, of course, be dropped as a synonym (see Ent. Monthly Mag. xxxii. p. 161).

# Fam. CEBRIONIDÆ *.

This family is represented in Central America by a single genus only, *Scaptolenus*, which has its head-quarters in Mexico and Guatemala, extending northwards to Texas and southwards to the Isthmus of Panama.

## SCAPTOLENUS.

*Scaptolenus*, Leconte, Trans. Am. Phil. Soc. x. p. 504 (1853); Chevrolat, Ann. Soc. Ent. Fr. 1874, p. 506; Horn, Trans. Am. Ent. Soc. ix. p. 83.

Chevrolat, in his "Revision des Cébrionides," enumerated twenty-one species of this genus, all but one or two being from our region, whence several others are now added. Altogether, eleven species are known from single examples only, and it is highly probable that when additional specimens of some of these are available for examination they will prove to be not really distinct. The females are excessively rare, and only four specimens, belonging to as many species, have been seen, and it is by no means certain that all these have been assigned to their proper partners. The males, too, in most cases, are very rarely obtained; those of *S. femoralis* and *S. rubriventris* have, however, been found in some numbers. According to Chevrolat, the females are apterous; but this is a mistake, as the abbreviated wings are plainly visible in the three specimens described by him. The three North-American species enumerated by Dr. Horn, all from Texas, are known from males only. The males of these insects are chiefly found upon leaves, but they are sometimes attracted to light. The females bear a superficial resemblance to various Melolonthidæ, and this is accentuated by their peculiar short clubbed antennæ.

The following table, based upon the males only, may be of service in identifying the numerous species; it must, however, be used with caution, as there is a complete gradation in the form of the antennæ from one section to another. *S. sulcipennis* and *S. subapicalis* have been somewhat doubtfully identified from the descriptions; but of the other species enumerated by Chevrolat the types (several of which are contained in M. René Oberthür's collection) have been available for examination.

*a*. Antennæ strongly serrate from the fourth joint; prothorax villose, the hairs fulvous; elytra attenuate, at the base much broader than the prothorax †.

*a'*. Body broad and robust; penultimate joint of the maxillary palpi not stouter than the apical joint; prothorax densely clothed with very long fulvous hairs; elytra gibbous, rather deeply sulcate; anterior tibiæ with the median tooth acute . . . . . *fulvus*.

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* By G. C. Champion.

† The North-American *S. lecontei*, Chevr., belongs to this section.

*b'*. Body narrower; penultimate joint of the maxillary palpi stouter than the apical joint; prothorax more sparsely clothed with long fulvous hairs; elytra less gibbous, more elongate, and feebly sulcate; anterior tibiæ with the median tooth obtuse . . . . . *palpalis.*

*b*. Antennæ with the fourth and following joints more or less acutely dilated at the apex; prothorax villose, the hairs pallid or fulvous; elytra at the base much broader than the prothorax.

*c'*. Elytra gibbous, rather short, attenuate.

*a''*. Elytra feebly sulcate; antennæ moderately elongate . . . . . *vagans.*

*b''*. Elytra deeply sulcate; antennæ very elongate . . . . . *acutangulus.*

*d'*. Elytra flatter, elongate, subparallel; antennæ with the outer joints more strongly dilated at the apex . . . . . *amplipennis.*

*c*. Antennæ moderately or feebly serrate from the fourth joint *.

*e'*. Prothorax villose.

*c''*. Elytra gibbous and strongly attenuate, at the base much broader than the prothorax, the latter not twice as broad as long.

*a'''*. Head, prothorax, and breast thickly clothed with very long blackish or fuscous hairs; eyes prominent.

*a*⁴. Elytra rather short, attenuate, deeply sulcate and striate . . . . *guttiventris.*

*b*⁴. Elytra elongate and abruptly attenuate, feebly sulcate . . . . *hirticollis.*

*b'''*. Head and prothorax clothed with very long fuscous hairs, the breast with fulvous hairs; elytra short and striate; eyes small and not prominent . . . . . *californicus.*

*c'''*. Head, prothorax, and breast clothed with long pallid hairs; elytra very deeply sulcate . . . . . *sulcipennis.*

*d''*. Elytra more parallel, very little narrowed behind; prothorax much narrower than the elytra, twice as broad as long; head, prothorax, and breast with long fulvous hairs; mandibles elongate, becoming slender outwards, with a short tooth near the middle . . . . . *acrognathus.*

*f'*. Prothorax clothed with shorter hairs, which are fulvous in colour, the breast with long fulvous hairs; prothorax nearly as broad as the elytra, dilated anteriorly, and with short hind angles; elytra oval, moderately long; antennæ short and slender, distinctly serrate . . . . . *laticollis.*

*d*. Antennæ with the joints from the fourth subparallel or very little dilated at the apex.

*g'*. Prothorax villose, the hairs long and semi-erect.

*e''*. Prothorax not twice as broad as long.

*d'''*. Elytra gibbous, attenuate.

*c*⁴. Head, prothorax, and breast clothed with very long fulvous or pallid hairs.

*a*⁵. Elytra short, not distinctly costate.

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* The North-American *S. estriatus*, Lec., and *S. ocreatus*, Horn, no doubt belong to this section.

$a^6$. Prothoracic villosity dense; elytra deeply sulcate; prothorax dilated anteriorly . . . . . *villosus.*

$b^6$. Prothoracic villosity rather sparse; elytra feebly sulcate; prothorax less dilated anteriorly . . . . . *mouffleti.*

$b^5$. Elytra moderately elongate, sulcate and distinctly costate; prothorax not dilated anteriorly . . . . . *pueblæ.*

$a^4$. Head and prothorax clothed with long intermixed fuscous and fulvous hairs, the breast with fulvous hairs; prothorax dilated anteriorly and constricted behind . . . . . *candezei.*

$e'''$. Elytra more parallel, very little narrowed behind; prothorax much narrower than the elytra, constricted behind, with long narrow hind angles; head and prothorax clothed with long blackish hairs, the breast with fulvous hairs . . . . . *nigriceps.*

$f''$. Prothorax very short, twice as broad as long, much narrower than the elytra.

$f'''$. Head and prothorax sparsely clothed with very long, erect, intermixed brownish and fulvous hairs, the breast with paler hairs; elytra elongate, gradually narrowing behind, distinctly striate; antennæ rather stout, moderately long . . . . . *brevicollis.*

$g'''$. Head and prothorax sparsely clothed with moderately long, semi-erect, fuscous hairs, the breast also with fuscous hairs; elytra elongate, subparallel, not striate; antennæ elongate.

$e^4$. Apical joint of the maxillary palpi longer than the preceding joint; elytra rather finely punctate, with scattered coarse impressions at the apex . . . . . *gehini.*

$f^4$. Apical two joints of the maxillary palpi elongate, equal in length; elytra more coarsely punctured, without coarser impressions at the apex . . . . . *ruficornis.*

$h'$. Prothorax clothed with short, decumbent, pallid or fulvous hairs, not twice as broad as long, dilated anteriorly.

$g''$. Prothorax distinctly narrower than the elytra, the latter attenuate.

$h'''$. Elytra very deeply sulcate . . . . . *revestitus.*

$i'''$. Elytra shallowly sulcate . . . . . *subapicalis.*

$h''$. Prothorax nearly or quite as broad as the elytra.

$j'''$. Elytra very elongate and subparallel; femora luteous; prothorax and elytra fulvous-brown . . . . . *chevrolati.*

$k'''$. Elytra less elongate, more or less narrowed behind.

$g^4$. Femora infuscate . . . . . *rubriventris.*

$h^4$. Femora luteous or flavous.

$c^5$. Body robust; elytra rather strongly attenuate; prothorax and elytra castaneous . . . . . *guerini.*

$d^5$. Body more slender.

$c^6$. Elytra comparatively short; prothorax and elytra more or less castaneous, the latter sometimes blackish at the apex.

$a^7$. Elytra with coarse impressions at the apex; prothorax sometimes marked with black; third joint of the antennæ considerably longer than the second . . . . . *signaticollis.*

$b^7$. Elytra without coarse impressions at the apex; third joint of the antennæ scarcely longer than the second . . *teapensis.*

$d^6$. Elytra moderately elongate.

$c^7$. Antennæ not very elongate.

$a^8$. Prothorax and elytra usually black or piceous, the prothorax sometimes fulvous; elytra rather finely punctured. *femoralis.*

$b^8$. Prothorax and elytra obscure rufo-testaceous; elytra coarsely punctured . . . . . *obscuriceps.*

$d^7$. Antennæ very elongate, slender; prothorax and elytra pitchy-brown . . . . . *longicornis.*

## 1. Scaptolenus fulvus. (Tab. XXV. figg. 1, 1 *a*, ♂.)

♂. *Scaptolenus fulvus*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 510[1].

♂. *Scaptolenus gibbus*, Chevr. loc. cit. pp. 508, 511[2].

*Hab.* Mexico (*coll. Oberthür*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Guanajuato (*Sallé* [1]), Etla in Oaxaca (*Sallé* [2]).

In this species the elytra are broad and gibbous at the base and strongly narrowed behind; the apical joint of the maxillary palpi is about as long as the preceding; the antennæ are strongly serrate from the fourth joint; and the head, thorax, femora, and under surface are thickly clothed with very long fulvous hairs, the elytra with much shorter pubescence.

Eight examples are before me, including the types in the Sallé collection. *S. gibbus* differs from *S. fulvus* in having the elytra a little more deeply sulcate and not quite so closely punctured. Both occur at Etla. The North-American *S. lecontei*, Chevr. (=*femoralis*, Lec.), is extremely like *S. fulvus*, but it is larger and more robust and has a less transverse thorax. A specimen from Etla is figured.

## 2. Scaptolenus palpalis.

♂. Elongate, moderately broad, strongly narrowed behind, rather shining; head, prothorax, and scutellum black, the elytra piceous, with the apical half indeterminately darker, the mandibles castaneous, black at the tip, the body beneath and the femora fulvous, the antennæ, tibiæ, and tarsi reddish-brown; the head, prothorax, scutellar region, femora, and breast somewhat thickly clothed with long fulvous hairs, the rest of the elytra sparsely pubescent, the marginal hairs fulvous. Head coarsely, unequally punctate, the eyes very large and prominent; mandibles short, abruptly incurved from the middle; penultimate joint of the maxillary palpi stout, stouter and slightly longer than the apical joint; antennæ moderately elongate, joint 3 twice as long as 2, the following joints broadly and somewhat abruptly dilated at the apex, 4 twice as long as 3, 11 abruptly constricted before the apex, with the apical portion narrow. Prothorax nearly twice as broad as long, rounded but not dilated at the sides anteriorly, with the hind angles divergent and moderately produced; the surface thickly, finely punctate. Scutellum densely punctured. Elytra a little more than three times the length of the head and prothorax, and considerably wider than the latter, rapidly narrowing behind; feebly sulcate, except at the base, with

the interstices narrowly, vaguely costate, and thickly, finely punctate. Anterior tibiæ with the median dilatation obtuse, the apical tooth long.

Length 16½, breadth 6 millim.

*Hab.* MEXICO, Parras in Coahuila (*Dr. Palmer*).

One mutilated specimen. Belongs to Chevrolat's second division of the genus, differing from *S. vagans* in the stouter palpi, with the penultimate joint thicker than the apical one, the more strongly serrate antennæ, the larger eyes, the broader thorax, with less produced hind angles, and the obtuse median tooth of the anterior tibiæ. The less elongate, more strongly serrate antennæ, the feebly sulcate elytra, and the form of the maxillary palpi separate it from *S. acutangulus*. From *S. fulvus* and *S. lecontei*, Chevr., it may be known by its less robust, narrower shape, longer elytra, sparser villosity, the form of the palpi, &c.

### 3. **Scaptolenus vagans.** (Tab. XXV. fig. 2, ♂, antenna.)

♂ ♀. *Scaptolenus vagans*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 512, t. 1. figg. 1 (♂), 2, 2 *a*, *b* (♀)[1].

*Hab.* MEXICO (*coll. Oberthür, ex Chevrolat*), La Parada in Oaxaca (*Boucard, Sallé*[1]).

The types (♂ and ♀) of this species are contained in the Sallé collection, and there is also a male of it in M. René Oberthür's collection. In *S. vagans* (♂) the antennal joints 4–10 are somewhat acutely produced at their inner apical angle; the thorax is very much narrower than the elytra, and not dilated at the sides in front; and the elytra are broad and gibbous at the base, rapidly narrowing posteriorly, and moderately elongate. The head, thorax, scutellar region, and breast are thickly clothed with very long fulvous hairs. The apical two joints of the maxillary palpi are equal in length. An antenna of the male is figured.

### 4. **Scaptolenus acutangulus.** (Tab. XXV. figg. 3, 3 *a*, ♂.)

♂. Elongate, broad, much narrowed behind, feebly shining; head, prothorax, and scutellum black, the mandibles castaneous, black at the tip, the antennæ infuscate, the elytra and the body beneath piceous, the apical margins of the ventral segments testaceous, the femora flavous, the tibiæ and tarsi obscure reddish-brown; the head, prothorax, scutellar region, and femora thickly clothed with long pale fulvous hairs, the rest of the elytra sparsely pubescent, the margins fimbriate, the ventral segments with long scattered fulvous hairs. Head very sparsely, coarsely, unequally punctate, the eyes large and prominent; mandibles short, abruptly incurved at the middle, the basal portion stout; maxillary palpi long and rather slender, the apical two joints equal in length; antennæ very elongate, joint 3 twice as long as 2, and 4 nearly three times as long as 3, the joints from the fourth abruptly and angularly dilated at the inner apical angle, 11 constricted at about one-third from the apex, with the apical portion narrow. Prothorax about three-fifths broader than long, rounded at the sides anteriorly, slightly constricted behind, with very long, slender, divergent hind angles; the surface thickly, rather finely punctate, depressed along the middle. Scutellum densely punctured. Elytra three times the length of the head and prothorax, and much wider than the latter, rapidly narrowing posteriorly, gibbous at the base and flattened on the disc; deeply sulcate, with the interstices convex, and rather sparsely, finely punctate.

Length 15, breadth 5¾ millim.

*Hab.* MEXICO, Jalacingo in Vera Cruz (*Höge*).

One example. Belongs to Chevrolat's second division of the genus, differing from the male of the only species included in it by him, *S. vagans*, in the deeply sulcate, more attenuate, and sparsely punctured elytra, the more elongate antennæ, with the joints from the fourth more abruptly dilated at the apex, and the larger thorax.

From *S. sulcipennis* it may be separated by the form of the antennæ, as well as by the broader and more attenuate elytra.

### 5. **Scaptolenus amplipennis.** (Tab. XXV. figg. 4, 4 *a*, ♂.)

♂. *Scaptolenus amplipennis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 515 [1].

*Hab.* Mexico (*Sallé* [1]).

Unique in the Sallé collection. This insect is testaceous in colour, with the long hairs on the head, thorax, and under surface fulvous, and the hairs at the sides of the elytra beyond the middle fuscous. The antennæ have the joints from the sixth somewhat strongly dilated at the apex, the fourth and fifth also a little widened at the tip. The apical two joints of the maxillary palpi are about equal in length. The thorax is nearly twice as broad as long and a great deal narrower than the elytra, with the hind angles extremely long and slender. The elytra are broad, a little narrowed posteriorly, somewhat flattened on the disc, faintly striate, with the interstices costate at the base and almost flat beyond, and somewhat thickly punctured.

### 6. **Scaptolenus guttiventris.** (Tab. XXV. figg. 5, 5 *a*, ♂.)

♂. *Scaptolenus guttiventris*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 525 [1].

*Hab.* Mexico (*coll. Oberthür, ex Chevrolat & Mniszech*), Etla in Oaxaca (*Sallé* [1]).

Described from five male examples, four of which are before me. In M. René Oberthür's collection there is also a varietal form of the male with the elytra fusco-testaceous in colour. *S. guttiventris* may be distinguished from all our other species, *S. hirticollis* excepted, by the long, dense, fuscous villosity of the head, thorax, scutellar region, femora, and under surface. The antennæ are distinctly serrate from the fourth joint; the eleventh joint is abruptly constricted before the apex, with the apical portion narrow. The apical two joints of the maxillary palpi are subequal in length. The thorax is nearly twice as broad as long, much narrower than the elytra, rounded but not dilated at the sides anteriorly, with excessively long, slender, divergent hind angles. The elytra are broad and convex at the base, considerably narrowed posteriorly, deeply sulcate and distinctly striate (except at the base), with the interstices convex and rather coarsely punctured. A specimen from Etla is figured.

### 7. **Scaptolenus hirticollis.** (Tab. XXV. figg. 6, 6 *a*, ♂.)

♂. Elongate, moderately broad, attenuate behind, slightly shining; head, prothorax, and scutellum black, the prothorax obscure castaneous at the sides; the mandibles castaneous, black at the tip; the antennæ ferrugineo-testaceous, with the three basal joints partly piceous; the elytra fusco-testaceous; the body beneath and the femora flavous, the breast and the apex of the abdomen infuscate, the tibiæ and tarsi reddish-brown; the head, prothorax, scutellar region, femora, and breast densely clothed with very long blackish hairs, the long marginal hairs of the elytra also black, the rest of the elytral pubescence short and partaking of the ground-colour. Head sparsely, coarsely, unequally punctate; eyes large and prominent; mandibles short, abruptly incurved at the middle, the basal portion very stout; maxillary palpi with the apical two joints equal in length; antennæ rather short, feebly serrate, joint 3 twice as long as 2, 4 rather more than twice as long as 3, 11 obliquely truncate at the apex. Prothorax short, nearly twice as broad as long, rounded but not dilated at the sides anteriorly, with greatly produced, slender, divergent hind angles; the surface thickly, finely punctate. Scutellum densely punctured. Elytra very elongate, about three and one-third times the length of the head and prothorax, moderately gibbous at the base, very much wider than the prothorax, and abruptly narrowed from about the basal third; thickly, rather finely punctate, each with five vague narrow costæ on the disc, the interspaces appearing broadly and shallowly sulcate.

Length 17, breadth $6\frac{1}{4}$ millim.

*Hab.* GUATEMALA, Tecpan in the Los Altos region (*Conradt*).

One specimen. This insect somewhat resembles *S. amplipennis*, but it has the antennæ short and feebly serrate, the long hairs on the head, thorax, and breast are almost black, and the elytra are abruptly narrowed from the basal third, and narrowly, vaguely costate, without trace of striæ. In the very elongate, abruptly narrowed elytra it differs from all the allied forms. The only other known species with very long dark villosity on the thorax and breast is *S. guttiventris*.

### 8. **Scaptolenus californicus.** (Tab. XXV. figg. 7, 7 *a*, ♂.)

♂. *Scaptolenus californicus*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509[1], 524[2].

*Hab.* NORTH AMERICA, ? California [2].—MEXICO [1].

There are two specimens of this species in M. René Oberthür's collection, both labelled "California." As Chevrolat [1] also gives "Mexico" as a locality, and Dr. Horn has expressed his opinion that the insect is really Mexican, I include it in our list. *S. californicus* is allied to *S. guttiventris*, from which it differs as follows:—The eyes are much smaller and less prominent, the head thus appearing smaller; the thorax is relatively narrower and less transverse; the elytra are much shorter, appearing more narrowed behind, and piceous in colour, with about the basal third indeterminately testaceous; and the long hairs on the breast are fulvous. The antennæ, palpi, and mandibles are similarly formed in the two species. The long hairs on the head and thorax are fuscous in colour.

### 9. **Scaptolenus sulcipennis.**

♂. *Scaptolenus sulcipennis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 514[1].

*Hab.* MEXICO (*coll. Jekel* [1]; *coll. Oberthür*).

In M. René Oberthür's collection there are three males of a *Scaptolenus* which seem to be referable to this species, the type of which I have not seen. These specimens differ from *S. revestitus* in having the antennal joints 4–10 more distinctly serrate, and the thorax relatively narrower, less dilated at the sides anteriorly, and clothed with long, erect, fulvous hairs.

### 10. **Scaptolenus acrognathus.** (Tab. XXV. figg. 8, 8 *a*, ♂.)

♂. Elongate, moderately broad, a little narrowed behind, rather shining; head and scutellum black, the mandibles castaneous, black externally and at the tip, the antennæ brown, with the basal joints black, the prothorax piceous, paler at the sides, the elytra pitchy-brown, paler near the scutellum, the body beneath and the femora flavous, the tibiæ and tarsi piceous; the head, prothorax, scutellar region, breast, and femora somewhat thickly clothed with very long fulvous hairs, the ventral segments with long scattered hairs, the rest of the elytra sparsely pubescent, the margins fimbriate. Head coarsely, sparsely, unequally punctate, the eyes moderately large and prominent; maxillary palpi with the apical joint slightly longer than the preceding; mandibles very long and curved, stout at the base, becoming slender outwards, each with a very short but distinct tooth on the inner edge a little beyond the middle; antennæ rather short, joint 3 about twice as long as 2, 4 nearly twice as long as 3, the joints from the fourth gradually becoming more produced at their inner apical angle, 11 obliquely truncate at the tip. Prothorax very short, twice as broad as long, rounded and somewhat dilated at the sides anteriorly, appearing slightly constricted behind, with excessively long, slender, divergent hind angles; the surface thickly, coarsely punctate. Scutellum thickly punctured. Elytra about three and one-half times the length of the head and prothorax, and one-half wider than the latter, moderately gibbous at the base, and flattened on the disc, narrowing from the shoulders downwards, the sides almost straight; sulcate from a little below the base to the apex, with the interspaces moderately raised, and somewhat thickly, finely punctate.

Length $15\frac{1}{2}$, breadth $5\frac{3}{4}$ millim.

*Hab.* Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One specimen. Allied to *S. amplipennis*, but differing from it in having the antennæ shorter, with the outer joints less produced at the apex; the mandibles much longer, more curved, and toothed within; the thorax shorter; the elytra less elongate and more narrowed behind (when closed), with the interstices more convex and more rugulose; and the maxillary palpi shorter and stouter, the apical joint being slightly longer than the preceding. The form of the antennæ distinguishes it at once from *S. brevicollis*. In *S. acrognathus* the mandibles are longer, more acute, and less abruptly curved inwards than in any of the allied forms.

### 11. **Scaptolenus laticollis.** (Tab. XXV. figg. 9, 9 *a*, ♂.)

♂. Elongate, broad, strongly narrowed behind, shining; castaneous, the basal half of the head black, the elytra, except along the margins and suture, gradually becoming darker from about the middle onwards, the mandibles castaneous, black at the tip, the antennæ and palpi ferrugineo-testaceous, the body beneath luteous, the femora flavous, the tibiæ rufescent, the tarsi darker; the head, prothorax, and scutellar region somewhat thickly clothed with moderately long fulvous hairs, the femora and breast with longer similarly coloured hairs, the rest of the elytra sparsely pubescent, the margins fimbriate. Head coarsely, thickly punctate, the eyes very large and prominent; maxillary palpi with the apical two joints equal in length; mandibles moderately long, abruptly bent inwards at the middle, stout at the base, acute at the

tip; antennæ short and slender, tapering outwards, joint 3 about twice as long as 2, and 4 twice as long as 3, the joints from the fourth distinctly serrate, 11 abruptly constricted beyond the middle, and with the apical portion slender. Prothorax largely developed, about three-fifths broader than long, rounded and dilated at the sides anteriorly; the hind angles acute and divergent, comparatively short; the surface thickly, rather finely punctate. Scutellum densely punctured. Elytra oval, nearly three times as long as the head and prothorax, and not much wider than the latter at the base, gibbous in front and flattened on the disc; sulcate, with the interstices feebly, narrowly costate, and thickly rather finely punctate. Length 17, breadth $6\frac{1}{2}$ millim.

*Hab.* MEXICO, Ventanas in Durango 2000 feet (*Forrer*).

One example. Belongs to Chevrolat's third division of the genus, near *S. sulcipennis*. The more oval elytra, the shorter and more serrate antennæ, with strongly constricted apical joint, and the longer hairs on the thorax, separate it from *S. guerini*, which also has longer hind angles to the thorax.

### 12. **Scaptolenus villosus.** (Tab. XXV. figg. 10, 10 *a*, ♂.)

♂. *Scaptolenus villosus*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 514[1].

*Hab.* MEXICO (*Sallé, ex coll. Sturm*[1]).

Described from two specimens, one of which, the type, is in the Sallé collection. *S. villosus* somewhat resembles *S. fulvus*; but it has the thorax relatively broader and considerably dilated at the sides anteriorly, the elytra less elongate, the mandibles shorter, the maxillary palpi infuscate and much shorter and stouter, the eyes less prominent, and the antennæ very feebly serrate. The hairs on the head, thorax, scutellar region, femora, and breast are very long and fulvous in colour. The apical joint of the maxillary palpi is about as long as the preceding. The specimens placed under the name *S. villosus* in the de Bonvouloir collection (now in the possession of M. René Oberthür) belong to other species.

The type is figured.

### 13. **Scaptolenus mouffleti.** (Tab. XXV. figg. 11, 11 *a*, ♂.)

♂. *Scaptolenus mouffleti*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 523[1].

*Hab.* MEXICO, Vera Cruz (*Moufflet, in coll. Sallé*[1]).

Unique in the Sallé collection. This species resembles *S. vagans* in shape, but the antennal joints are stouter and not dilated at the apex. The thorax is much larger, and dilated at the sides anteriorly. The elytra are short, greatly narrowed behind, and dehiscent from about the basal third. The mandibles are short, acute at the tip. The apical two joints of the maxillary palpi are equal in length. The hairs on the head, thorax, and breast are very long and fulvo-cinereous in colour.

### 14. **Scaptolenus pueblæ.** (Tab. XXV. figg. 12, 12 *a*, ♂.)

♂. *Scaptolenus pueblæ*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 521[1].

*Hab.* Mexico, Puebla (*Sallé*[1]).

The type of this species is in the Sallé collection, and there is a specimen in M. Oberthür's collection possibly belonging to it.

This species somewhat resembles *S. fulvus*; but it is narrower, with less gibbous and more elongate elytra, very feebly serrate antennæ, and the long pilosity on the thorax and breast not so dense. The mandibles are short and stout; the eyes are moderately large and prominent; the apical two joints of the maxillary palpi are about equal in length.

### 15. **Scaptolenus candezei.** (Tab. XXV. figg. 13, 13 *a*, ♂.)

♂. *Scaptolenus candezi*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 521[1].

*Hab.* Guatemala (*Sallé*, *Boucard*[1]).

There are two examples of *S. candezei* in the Sallé collection. This species has very long, erect, fulvous and fuscous hairs on the head and thorax, and the breast is clothed with long fulvous hairs. The thorax is about three-fifths broader than long, very much narrower than the elytra, rounded and slightly dilated at the sides anteriorly, with greatly produced slender hind angles; the surface is rather sparsely punctured. The elytra are gibbous at the base and rapidly narrowed behind (appearing somewhat oval in shape, when closed along the suture); they are feebly sulcate and thickly punctured. The mandibles are moderately long. The maxillary palpi are rather slender, with the apical joint as long as the preceding. The antennæ are slender, with the joints from the fourth almost parallel, the eleventh being obliquely truncate at the tip.

### 16. **Scaptolenus nigriceps.** (Tab. XXV. figg. 14, 14 *a*, ♂.)

♂. Elongate, rather narrow, subparallel, shining; piceous, the head, the disc and hind angles of the prothorax, and the tips or the whole of the mandibles, black, the antennæ ferruginous or brown, with the basal three joints black, the body beneath and the femora luteous, the tibiæ pitchy-red, the tarsi piceous; the head, prothorax, and scutellar region rather sparsely clothed with moderately long blackish hairs, the rest of the elytra very sparsely pubescent, the long marginal hairs blackish, the breast densely, and the rest of the body beneath and the femora sparsely, clothed with long fulvous hairs. Head sparsely, irregularly, rather coarsely punctate, the eyes moderately large and prominent; mandibles short, abruptly incurved at the middle, the basal portion stout; maxillary palpi rather slender, the apical two joints equal in length; antennæ rather short, joint 3 twice as long as 2, and 4 twice as long as 3, the joints from the fourth very feebly serrate, 11 obliquely truncate at the tip. Prothorax about three-fifths broader than long, dilated and rounded at the sides anteriorly, constricted behind, with extremely elongate, slender, divergent hind angles; the basal median lobe obtuse; the surface rather finely and sparsely punctate. Scutellum closely punctured. Elytra a little more than three times the length of the head and prothorax, and considerably wider than the latter, slightly narrowed behind, gibbous in front, and flattened on the

disc; feebly sulcate, with the interstices somewhat convex, and rather coarsely and moderately thickly punctate.

Length $15\frac{1}{2}$–16, breadth $5\frac{1}{8}$–$5\frac{3}{4}$ millim.

*Hab.* Costa Rica, Rio Sucio (*Rogers*).

Two males. This insect approaches *S. revestitus*; but it has the hairs on the head and thorax longer and almost black, the thorax relatively narrower, more rounded at the sides, and more sparsely and less coarsely punctate, the elytra much more feebly sulcate and more thickly punctured. The more rounded sides of the thorax, the subparallel elytra, and the rather more distinctly serrate antennæ separate it from *S. candezei*. In one specimen the thorax is very deeply sulcate down the middle, but this is probably accidental.

### 17. **Scaptolenus brevicollis.** (Tab. XXV. figg. 15, 15 *a*, ♂.)

♂. Elongate, moderately broad, a little narrowed behind, shining; head, prothorax, and scutellum black, the antennæ brown, with the three basal joints black, the mandibles castaneous, black at the tip, the elytra piceous, the under surface black, the apex of each ventral segment fulvous, the legs black, the femora flavous, except at the tip; the head, prothorax, and scutellar region sparsely clothed with very long erect brownish and fulvous hairs, the prosternum and breast thickly clothed with long fulvous hairs, the femora and ventral segments also with long hairs, the rest of the elytra sparsely pubescent, the margins fimbriate. Head sparsely, coarsely, unequally punctate, transversely depressed between the eyes, the latter comparatively small; maxillary palpi rather stout, the apical two joints about equal in length; mandibles short and stout, abruptly incurved at the middle; antennæ moderately long, rather stout, very feebly serrate, joint 3 twice as long as 2, 4 twice as long as 3, 11 obliquely truncate at the apex. Prothorax very short, twice as broad as long, rounded and somewhat dilated at the sides anteriorly and slightly constricted behind, with long, slender, divergent hind angles; the surface thickly, coarsely punctate. Scutellum thickly punctured. Elytra three and two-fifths longer than the head and prothorax, and much wider than the latter, gradually narrowing posteriorly, moderately gibbous at the base and flattened on the disc, dehiscent at the suture behind; distinctly striate from a little below the base to near the apex, the striæ crenate posteriorly, the interstices feebly convex and somewhat thickly, coarsely punctate.

Length 16, breadth 6 millim.

*Hab.* Mexico, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*).

One specimen. Allied to *S. ruficornis*, but differing from it in the stouter and less elongate antennæ, the stouter palpi, the more dilated thorax, which is clothed with much longer and more erect hairs, the distinctly striate elytra, &c. The thorax is much shorter than in *S. candezei* and *S. nigriceps*.

### 18. **Scaptolenus gehini.** (Tab. XXV. figg. 16, 16 *a*, ♂.)

♂. *Scaptolenus gehini*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509[1], 523[2].

♂. Elongate, rather narrow, subparallel, shining; head and scutellum black, the mandibles castaneous, black at the tip, the antennæ brown, darker at the base, prothorax piceous or obscure rufo-castaneous, the elytra piceous or brown, the breast testaceous or obscure testaceous, the ventral segments, and also the femora, flavous, the tibiæ and tarsi piceous or black; the head, prothorax, scutellar region, breast, and femora somewhat thickly clothed with moderately long fuscous hairs, the ventral segments with scattered hairs, the rest of the elytra sparsely pubescent, the margins fimbriate. Head sparsely, irregularly, rather coarsely punctate, the eyes moderately large and prominent; maxillary palpi more or less infuscate, the apical joint slightly longer than the preceding; mandibles short and stout, abruptly bent inwards at the

middle; antennæ moderately elongate, joint 3 twice as long as 2, 4 three times as long as 3, the joints from the fourth almost parallel. Prothorax very short, twice as broad as long, rounded at the sides anteriorly, with long, divergent, slender hind angles; the surface thickly punctate, the punctures coarse on the disc, finer at the sides. Scutellum densely punctured. Elytra rather more than three times the length of the head and prothorax, and much wider than the latter, subparallel, narrowing a little behind, moderately gibbous at the base and flattened on the disc, acutely margined at the sides; obsoletely sulcate, without trace of striæ, and finely, somewhat thickly punctate, with numerous conspicuous scattered coarse impressions towards the apex, the base distinctly grooved near the shoulder and also more sparsely punctured.

Length $13\frac{1}{2}$–$15\frac{1}{2}$, breadth $4\frac{1}{2}$–$5\frac{1}{4}$ millim.

*Hab.* North America, ? Texas[2].—Mexico[1]; Guatemala, Coban in Vera Paz (*Conradt*), Sabo in Vera Paz (*Champion*).

The type of this species is contained in M. René Oberthür's collection; it is labelled "Am. b., Gehin." The three specimens from Guatemala, from which the above description is taken, agree well with it. Dr. Horn's surmise (*cf.* Trans. Am. Ent. Soc. ix. p. 383) that the insect is probably Mexican is no doubt correct. *S. gehini* approaches *S. brevicollis*, but it is narrower and more parallel; the eyes are larger and more prominent; the hairs on the head and thorax are shorter and entirely fuscous; the antennæ are more slender; and the elytra are more finely punctured and obsoletely sulcate, without trace of striæ. The short thorax, subparallel elytra, &c., distinguish it from *S. candezei*. The type is figured.

### 19. **Scaptolenus ruficornis.** (Tab. XXV. fig. 17, ♂.)

♂. *Scaptolenus ruficornis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 522[1].

*Hab.* Mexico (*coll. Oberthür, ex de Bonvouloir*[1]).

There are two specimens of this species in M. René Oberthür's collection, from that of de Bonvouloir, one of which is marked "type."

In this insect the moderately long villosity of the head, thorax, scutellar region, and breast is fuscous; the maxillary palpi are elongate, with the apical two joints equal in length; the mandibles are short; the thorax is very short, about twice as broad as long, and not much narrower than the elytra; and the elytra are elongate and subparallel, obsoletely sulcate, with indications of faint striæ, and coarsely, thickly punctate*. *S. ruficornis* is very nearly allied to *S. gehini*, and apparently only differs from it in the slightly longer penultimate joint of the maxillary palpi, and the more coarsely punctured elytra, without well-defined coarse impressions towards the apex. The type is figured.

### 20. **Scaptolenus revestitus.**

♂. *Scaptolenus revestitus*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 508, 513[1].

*Hab.* Mexico (*Sallé*[1]), Jalapa (*F. D. Godman*).

* Described as "minute punctulatis."

The type of this species is contained in the Sallé collection, and we also possess an example of it from Jalapa. Chevrolat's second specimen (now in the collection of M. René Oberthür) is probably referable to *S. femoralis*. In this insect the hairs on the thorax are rather short and decumbent, and brownish in colour; the outer joints of the antennæ are very slightly dilated at the apex; the mandibles are short; the apical two joints of the maxillary palpi are equal in length; the thorax is not very much narrower than the elytra; and the elytra are narrowed behind, deeply sulcate, with the interstices convex, and rather sparsely punctured.

### 21. **Scaptolenus subapicalis.**

♂. *Scaptolenus subapicalis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 519[1].

*Hab.* Mexico (*coll. Mniszech*[1]).

The type of this species cannot now be identified with certainty; but in the Mniszech collection (now in the possession of M. René Oberthür) there is a Mexican specimen agreeing fairly well with the description. There are also two others from Mexico in M. Oberthür's collection, one from that of Chevrolat (incorrectly labelled *S. villosus*), that probably belong to it. These three specimens have the head black, the thorax more or less infuscate, the elytra fusco-testaceous (blackish at the apex in one example), and the under surface and femora luteous. The yellowish-cinereous pilosity of the thorax is rather short and decumbent, that of the breast being much longer and denser. The thorax is a little dilated at the sides anteriorly, not twice as broad as long, with long, slender hind angles. The elytra are elongate, a little wider than the thorax, distinctly narrowed posteriorly, shallowly sulcate, with the interstices narrowly, vaguely costate, and somewhat thickly, finely punctate. The mandibles are short; the apical two joints of the maxillary palpi are equal in length; and the fourth and following antennal joints are very little widened outwards.

Compared with *S. femoralis*, these examples are less parallel, and they have the thorax less transverse, with more slender hind angles and rather longer pubescence.

### 22. **Scaptolenus chevrolati.** (Tab. XXV. fig. 18, ♂.)

♂. *Cebrio chevrolati*, Guér. Rev. Zool. 1844, p. 255[1]; Mag. Zool. 1844, Ins. t. 145[2].

♂. *Scaptolenus chevrolati*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 517, t. 1. figg. 3, 3 *a*, *b* (♂) (nec ♀)[3].

♀. *Scaptolenus femoralis*, Chevr. loc. cit. pp. 509, 516, t. 1. fig. 4 (♀)[3].

*Hab.* Mexico[2] (*Nieto*[1], *in coll. Oberthür*: ♂), Orizaba (*Sallé*[3 4]: ♂ ♀).

Guérin's original type of *Cebrio chevrolati* is contained in M. René Oberthür's collection. There are also two specimens of it in the Sallé collection, named as male and female of the same species, the female being the one figured by Chevrolat[3] as *S. femoralis*. In this species the thorax and elytra are fulvous-brown in colour; the

thorax is not much dilated at the sides anteriorly, and clothed with short decumbent fulvous hairs; the elytra are very elongate and parallel, shallowly sulcate, with the interstices narrowly costate, and rather coarsely punctured; the antennæ are moderately long, with the fourth and following joints almost parallel; the mandibles are short; the maxillary palpi are slender, with the apical two joints equal in length; and the eyes are large and prominent. We figure a male from Orizaba.

### 23. **Scaptolenus rubriventris.** (Tab. XXV. figg. 19, ♀; 20, ♂.)

♂. *Scaptolenus rubriventris*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 520[1].

♀. Oboval, robust, convex, bright rufo-castaneous, very shining, almost glabrous above, paler and sparsely pubescent beneath; legs reddish, the femora paler. Head rather convex in front, the anterior portion very coarsely and confluently punctured, for the rest sparsely, coarsely punctate; mandibles broadly flattened in their basal half, abruptly curved inwards from the middle. Prothorax strongly transverse, with the sides rounded anteriorly and constricted behind, the base and apex deeply bisinuate, and the basal median lobe broadly rounded; the hind angles acute and divergent, moderately produced; the lateral margins crenulate; the disc obsoletely canaliculate and deeply transversely depressed a little before the middle, and with a very deep oblique fovea on either side about the centre; the surface sparsely, coarsely, irregularly punctate, the punctuation becoming more crowded towards the sides, base, and apex. Scutellum transverse, rounded behind, coarsely, rugosely punctate. Elytra nearly three times the length of the prothorax, and a little wider than it at the base, widening to beyond the middle, dehiscent from about the basal third; obsoletely striate, and sparsely, irregularly, moderately coarsely punctate. Dorsal segments of the abdomen coarsely, thickly punctate, the ventral segments with widely scattered coarse punctures. Wings about four-fifths the length of the elytra.

Length (to apex of the elytra) 16, breadth $7\frac{1}{2}$ millim.

*Hab.* Costa Rica (*Sallé*[1], *Van Patten*); Panama, Volcan de Chiriqui (*Champion*), Chiriqui (*coll. Oberthür*).

Of this species we have a considerable series of males from Costa Rica and Chiriqui; and a single female from Costa Rica, received with several males from Van Patten, no doubt belongs to the same species. *S. rubriventris*, the type of which is before me, is very closely allied to (and perhaps a varietal form of) *S. femoralis*, but differs from it in the infuscate femora and slightly darker breast. It varies greatly in size and colour. The female may be known from the corresponding sex of *S. guerini* and *S. chevrolati* by the broadly rounded basal median lobe of the thorax and the transverse scutellum. The male is described as having four foveæ near the anterior margin of the thorax, but they are invisible to me in the type. We figure the female and the type of the male, both from Costa Rica.

### 24. **Scaptolenus guerini.** (Tab. XXV. fig. 21, ♂.)

♀. *Scaptolenus chevrolati*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 518, t. 1. fig. 4 (♀)[1] (nec Guérin).

*Hab.* Mexico (*coll. Oberthür*), Orizaba (*Sallé*[1]).

Six specimens of this species, for which a new name is required, have been

examined—two males and a female from the Sallé collection (the female being the one described and figured by Chevrolat [1]) and three males from M. René Oberthür's collection. The males (one of which is labelled *S. chevrolati* in Chevrolat's handwriting) differ from those of *S. chevrolati*, Guér., as follows:—They are broader and more robust; the thorax is more transverse; and the elytra are more gibbous at the base, less elongate, distinctly narrowed behind, and more thickly punctured. The head is black, the thorax and elytra are castaneous or fulvous-brown, the apical margin of the latter being infuscate or black, the under surface and femora are luteous, and the tibiæ and tarsi are rufescent. The pilosity of the thorax is short and decumbent, and fulvous in colour; the breast is clothed with much longer fulvous hairs. *S. guerini* is also broader and more robust than *S. femoralis*, and differently coloured above. In general shape it is very like *S. laticollis*, from which it may be easily separated by the form of the antennæ, the insect in this respect agreeing with *S. femoralis* and its allies. The female differs from the corresponding sex of *S. chevrolati*, Guér. (= *femoralis*, Chevr.), in having the thorax and elytra and the dorsal segments of the abdomen much more thickly punctured, and the elytra without well-defined sulci. A male from M. Oberthür's collection is figured.

### 25. **Scaptolenus signaticollis.** (Tab. XXV. fig. 22, ♂.)

♂. *Scaptolenus signaticollis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 518 [1].

*Hab.* Mexico (*coll. Oberthür, ex Chevrolat* [1] *& de Bonvouloir*).

There are two males of this species in M. René Oberthür's collection—one, the type, and one (labelled *chevrolati*, Guér.) from de Bonvouloir's collection. This last-mentioned specimen has the thorax almost entirely rufo-fulvous. From *S. chevrolati* the present species may be known by the much shorter and less parallel elytra, which (when closed) are considerably narrowed behind, feebly sulcate, and thickly punctured, with a few conspicuous coarse impressions towards the apex. The thorax is about three-fifths broader than long, very little narrower than the elytra, dilated and rounded at the sides anteriorly, with long divergent hind angles; the basal median lobe is longitudinally carinate. The antennæ are moderately long. The maxillary palpi are elongate, with the apical two joints equal in length. The mandibles are short. The hairs on the head, thorax, and scutellar region are moderately long and fulvous in colour; the breast is densely clothed with long, similarly-coloured hairs. The type is figured.

### 26. **Scaptolenus teapensis.** (Tab. XXV. figg. 23, 23 *a*, ♂.)

♂. Moderately elongate, narrow, subparallel, slightly attenuate behind, shining; head black, the prothorax rufo-castaneous, the elytra brown, indeterminately castaneous at the base and suffused with black at the apex, the body beneath and the femora luteous, the antennæ, tibiæ, and tarsi reddish-brown, the mandibles castaneous, black at the tip; the head, prothorax, and scutellar region clothed with short

decumbent fulvous hairs, the breast with longer similarly-coloured hairs, the rest of the elytra finely pubescent, the long marginal hairs black, except at the shoulders. Head coarsely, thickly punctate, the eyes large and prominent; maxillary palpi slender, the apical two joints equal in length; mandibles rather short, abruptly bent inwards at the middle; antennæ long and slender, joints 2 and 3 very short, subequal, 4–10 elongate and subparallel, 4 three times as long as 3, 11 constricted before the apex. Prothorax nearly twice as broad as long, rounded and slightly dilated at the sides anteriorly, with moderately produced divergent hind angles; the surface closely, somewhat coarsely punctate, the basal median lobe longitudinally sulcate. Scutellum closely punctured. Elytra nearly three times as long as the head and prothorax, and a little wider than the latter, moderately gibbous at the base, and gradually narrowing posteriorly; vaguely sulcate, with the interspaces very little raised, and closely, rather finely punctate, the punctuation becoming sparser at the base.

Length 14, breadth 15 millim.

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith*).

One specimen. Allied to *S. chevrolati*, Guér., but differing from it in the very short third joint of the antennæ (this being nearly twice as long as the second in that species) and the much shorter elytra, the latter closely and rather finely punctured and vaguely sulcate, without distinct costæ. The puncturing of the elytra is unusually close, except at the base, and the third joint of the antennæ is scarcely longer than the second. The apices of the elytra are black.

The less dilated thorax, the shorter third antennal joint, and the absence of the coarse impressions at the apex of the elytra separate this species from *S. signaticollis*.

### 27. **Scaptolenus femoralis.** (Tab. XXV. figg. 24, 24 *a*, 25, ♂, var.)

♂. *Cebrio femoralis*, Chevr. Col. Mex., Cent. ii. fasc. 8, no. 200 (Sept. 1835) (nec Lec.)[1].

♂. *Scaptolenus femoralis*, Chevr. Ann. Soc. Ent. Fr. 1874, pp. 509, 515, t. 1. fig. 5 (nec ♀)[2].

♂. *Cebrio flavipes*, Sturm, in litt.

*Hab.* Mexico (*Sallé, ex Sturm*), Orizaba (*Sallé*[2]; *coll. Oberthür, ex Chevrolat*[1]), Jalapa (*Höge*); Guatemala (*Sallé, Mus. Brit.*); Costa Rica, Caché (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Of this species we possess two male specimens only from Mexico; but in M. René Oberthür's collection there is a fair series of males from that country, including what appears to be Chevrolat's original type, from Orizaba. The female insect described and figured by Chevrolat under the name *S. femoralis* is here referred to *S. chevrolati*. We have, however, numerous males from Chiriqui, and also others from Costa Rica, that are no doubt referable to *S. femoralis*. The males of this species are usually black or piceous above, with the thorax lighter in colour in some specimens; in the two examples from Costa Rica the thorax is fulvous. According to Guérin (Rev. Zool. 1844, p. 256), *S. femoralis* differs from *S. chevrolati*, in the male sex, in the deep brownish-black colour of the upperside, the much broader thorax, especially in front, and the much less elongate, less parallel elytra. These differences apply to the specimens here referred to these species, but it must be remarked that two males only

(including the type) of *S. chevrolati* are available for examination. Some of the examples of *S. femoralis* have a short smooth raised line on the median basal lobe of the thorax. The elytral costæ are sometimes quite obsolete.

We figure one of Chevrolat's types (var. *b*) from Mexico; also a variety from Caché, Costa Rica.

### 28. **Scaptolenus obscuriceps.** (Tab. XXV. fig. 27, ♂.)

♂. *Scaptolenus obscuriceps,* Chevr. Ann. Soc. Ent. Fr. 1894, pp. 509, 520 [1].

*Hab.* Mexico, Panistlahuaca in Oaxaca (*Sallé* [1]).

Unique in the Sallé collection. The type is somewhat immature, and has the apical four joints of the antennæ broken off; it differs from *S. femoralis* in its paler colour, and in having the elytra more coarsely punctured and the fulvous hairs on the thorax longer. The shorter and less parallel elytra separate it from *S. chevrolati*.

### 29. **Scaptolenus longicornis.** (Tab. XXV. fig. 26, ♂, antenna.)

♂. Elongate, rather narrow, slightly attenuate behind, shining; pitchy-brown, the head black, the body beneath and the femora luteous, the antennæ ferrugineo-testaceous, with the three basal joints piceous, the mandibles castaneous, black at the tip, the tibiæ and tarsi piceous; the head, prothorax, and scutellar region clothed with rather short, decumbent fulvous hairs, the breast with longer similarly-coloured hairs, the rest of the elytra finely pubescent, the margins fimbriate. Head sparsely, somewhat coarsely punctate, the eyes large and prominent; mandibles short, abruptly curved inwards at the middle; maxillary palpi with the apical two joints equal in length; antennæ long and slender, joint 3 a little longer than 2, 4–10 elongate and subparallel, 4 three times as long as 3, 11 feebly constricted before the apex. Prothorax about three-fifths broader than long, rounded but not dilated at the sides anteriorly, with very long, slender, divergent hind angles; the surface thickly, rugulosely punctate. Scutellum closely punctured. Elytra elongate, about two and three-fourths longer than the head and prothorax, and a little wider than the latter, feebly gibbous at the base and flattened on the disc, narrowing posteriorly; sparsely, moderately finely, subseriately punctate, and towards the suture narrowly, obsoletely costate, without trace of striæ.

Length $17\frac{1}{2}$, breadth $5\frac{3}{4}$ millim.

*Hab.* Guatemala, Cerro Zunil (*Champion*).

One broken specimen from the Pacific slope. Very near *S. femoralis,* but with considerably longer antennæ, longer and more slender hind angles to the thorax, and (apparently) flatter elytra. The elytra are much more elongate than in *S. teapensis,* and quite sparsely punctured.

## Fam. RHIPIDOCERIDÆ *.

This is a family of small extent, represented in Central America by three genera—*Callirrhipis*, *Ptorthocera*, and *Sandalus*. In the first two the legs are not very stout, the tarsi are simple, the mandibles are rather short, and the gular appendages ("pièces jugulaires") are strongly developed, at least in our species; in *Sandalus* the legs are usually robust, with the tibiæ dilated at their outer apical angle and the tarsal joints dilated and bilamellate, the mandibles are long and stout, and the gula is without visible appendages. The females, so far as known, differ greatly from the males in all the species. Dr. Horn refers the genus *Vesperoctenus*, Bates †, containing a single species, *V. flohri*, from Mexico and Lower California, to this family; Bates included it in the Longicornia, a position also assigned to it by Mr. Gahan.

### CALLIRRHIPIS.

*Callirhipis*, Latreille, Règne Anim. ed. 2, iv. p. 459 (1829); Lacordaire, Gen. Col. iv. p. 249.
*Callirrhipis*, Gemminger and Harold, Cat. Col. vi. p. 1609; C. O. Waterhouse, Trans. Ent. Soc. Lond. 1877, p. 379.
*Celadonia*, Castelnau, Hist. Nat. Ins. Col. i. p. 256 (1840).
*Simianus*, Blanchard, in Dumont d'Urville's Voyage au Pôle Sud, Ins. p. 82 (1853).

Of the fifty-eight known species of this genus, fifteen only are American, these being distributed between Mexico and Monte Video and Chili. From within our limits eleven are now recorded, of which eight are described as new. The females appear to be very rare in collections ‡; they differ from the males in having the body usually almost or quite glabrous and the antennæ pectinate (instead of flabellate), as well as in their larger size and less parallel shape. We have received specimens of both sexes of seven of the Central-American species, the females of three of them (*C. laportei*, *C. vestita*, and *C. unicostata*) having been found in some numbers. In all of them the long, movable, horny, gular appendages ("pièces jugulaires") are very conspicuous. *C. laportei* has the eyes small and prominent; it probably belongs to *Celadonia*, Cast. (=*Simianus*, Blanch.), but is connected with the typical *Callirrhipis* by intermediate forms.

* By G. C. Champion.

† Ent. Monthly Mag. xxvii. p. 159 (1891).

‡ Mr. C. O. Waterhouse, in 1877, in his remarks on this genus, stated that he had not seen the female of any American species, and there are none in the British Museum to this day.

*a*. Legs more or less elongate; body black, fuscous, or brown; upper surface pubescent in the ♂, almost or quite glabrous in the ♀ *.

*a'*. Basal joint of the hind tarsi not longer than the following two joints united.

*a''*. The elytral costæ not connected by numerous transverse raised lines; antennæ strongly flabellate in the ♂.

*a'''*. Second elytral costa curved posteriorly and distinctly reaching the suture behind; eyes large and prominent in the ♂.

*a*⁴. The second costa strongly and very acutely raised from the middle onwards, the others indistinct: body robust in both sexes; front grooved and excavate . . . . . *carinifer*.

*b*⁴. The second costa moderately raised.

*a*⁵. Body broad and robust in both sexes; antennal rami (♂) excessively elongate . . . . . *valida*.

*b*⁵. Body narrow in the ♂, robust in the ♀; antennal rami (♂) shorter.

*a*⁶. Prothorax not or moderately dilated behind.

*a*⁷. Elytral punctuation almost uniform in the ♂; frontal excavation rather shallow . . . . . *obsoleta*.

*b*⁷. Elytral punctuation becoming very coarse towards the base in the ♂; frontal excavation deep; antennæ stoutly and moderately pectinate, and with the eleventh joint short, in the ♀ . . . . . *unicostata*.

*b*⁶. Prothorax strongly dilated behind; frontal excavation and prothoracic foveæ deep; antennæ strongly pectinate, and with the eleventh joint elongate, in the ♀ . . . . . *dilaticollis*.

*b'''*. Second elytral costa not distinctly extending in a curved line to the suture behind, but sometimes connected with it, and with the third also, by a faint oblique raised line.

*c*⁴. Body broad and robust; elytra with very faint costæ, the punctuation rather fine, with the interspaces thickly, minutely punctulate; frontal excavation and prothoracic foveæ deep; antennal rami (♂) excessively elongate; eyes (♂) large and prominent: size very large . . *childreni*.

*d*⁴. Body narrow in the ♂, robust in the ♀; antennal rami moderately elongate: size smaller.

*c*⁵. Upper surface thickly pubescent in the ♂; eyes rather small in both sexes: body black in the ♀ . . . . . *vestita*.

*d*⁵. Upper surface sparsely pubescent in the ♂; eyes large: body blackish-brown in the ♀ . . . . . *mexicana*.

*b''*. The elytral costæ connected by numerous transverse raised lines; eyes small and the antennal rami short in the ♂ . . . . . *venosa*.

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* The females of *C. obsoleta*, *C. childreni*, *C. venosa*, and *C. tenuipes* are unknown.

*b'*. Basal joint of the hind tarsi elongate, nearly as long as the following three joints united; antennæ strongly flabellate in the ♂; prothorax narrow in front, strongly dilated behind; second elytral costa curving round to the suture behind; legs slender . . . . . *tenuipes*.

*b*. Legs comparatively short; the basal joint of the hind tarsi about as long as the following two joints united, the next three joints subtransverse; eyes small and prominent in both sexes; antennæ strongly flabellate in the ♂, pectinate in the ♀; upper surface finely pubescent in the ♂, indistinctly pubescent or glabrous in the ♀: body testaceous-red (or ochraceous) and black, varying according to the predominance of the light or dark colour . . . . . *laportei*.

### 1. **Callirrhipis carinifer.** (Tab. XXIV. figg. 6, ♀; 6 *a*, antenna, ♀; 7, ♂.)

♂. Very elongate, broad, robust, moderately shining; fuscous or brown, the head and prothorax almost black, the abdomen reddish-brown, the antennæ, the two basal joints excepted, ferruginous, the legs brown, with the tarsi obscure ferruginous; rather sparsely clothed with fine fulvo-cinereous pubescence. Head coarsely, rugosely punctate, deeply longitudinally grooved in front, the vertex also canaliculate, the eyes large and prominent; antennæ with the rami on the third and following joints excessively elongate. Prothorax broader than long, rapidly narrowing from about the basal third forwards, slightly dilated behind and constricted at the middle, compressed in front at the sides beneath; densely, coarsely punctate, canaliculate from the base almost to the apex, depressed in the centre behind, and very deeply foveate on either side of the disc about the middle. Elytra very elongate, widest beyond the middle; each with a strongly raised, curved, acute ridge on the middle of the disc, extending from a little before the middle to the suture near the apex, and continued forwards as a faint raised line to the base, and also with indications of a faint raised line midway between this and the suture and another between it and the margin; the rest of the surface thickly, confusedly, rather finely punctate, with the interspaces rugulose and very sparsely, minutely punctured. Beneath closely, finely punctate. Legs moderately elongate; the basal joint of the hind tarsi as long as the following two joints united.

♀. Eyes smaller and less prominent; antennæ strongly pectinate from the third joint; upper surface almost glabrous; the elytra fusco-castaneous, with the scutellar region darker, more sparsely punctured, and a little more dilated beyond the middle.

*Var.*? ♀. Antennæ less strongly pectinate; the prothorax much more sparsely and finely punctured, the sides more dilated before the base (the prothorax appearing narrowed behind), the basal and apical margins rufescent; the elytra brownish-testaceous.

Length 15–20½, breadth 5–7 millim.

*Hab.* Mexico, Cordova (*Sallé*).

Three specimens, including the small example doubtfully referred to the same species. *C. carinifer* may be separated from its allies by the very acutely raised curved ridge on the middle of the disc of each elytron, the ridge becoming evanescent before the middle and extending round to the suture behind. The front is deeply grooved down the middle, appearing bilobed when the insect is viewed from above. The variety (?) has the elytra formed exactly as in the typical specimens, but in the form of the thorax it resembles *C. dilaticollis*.

### 2. **Callirrhipis valida.**

♂. Very elongate, broad, robust, somewhat shining; brownish-black, paler beneath, the abdomen ferruginous towards the tip; the antennæ ferruginous, with the basal joint black, the legs brown, with the tarsi

obscure ferruginous; rather sparsely clothed with fulvo-cinereous pubescence. Head coarsely, unequally punctate, transversely excavate in front and deeply canaliculate on the vertex, the eyes very large and prominent; antennæ with the rami on the third and following joints excessively elongate. Prothorax broader than long, rapidly and obliquely narrowing from the basal third forwards, appearing dilated behind, compressed anteriorly at the sides below; closely, coarsely punctate, depressed in the centre before the base and deeply foveate on either side of the disc about the middle, and with indications of a smooth median line. Elytra elongate, at the base slightly wider than the basal portion of the prothorax, widest beyond the middle; each with three distinct costæ—the second longer than the others and extending round to the suture posteriorly, and with traces of a fourth behind midway between the third and the margin; the rest of the surface closely, coarsely, subseriately punctate, the interspaces transversely rugulose and with a few widely scattered excessively minute punctures. Beneath densely, finely punctate. Legs moderately elongate; the basal joint of the hind tarsi as long as the following two joints united.

♀. Eyes smaller and less prominent; antennæ with the joints from the third (5–11 broken off) each with a short, stout ramus; head and prothorax very finely and sparsely pubescent, the latter canaliculate in front; the elytra, except along the outer margin, almost glabrous (short minute hairs are visible under a strong lens), and dilated beyond the middle; the under surface more sparsely punctured.

Length 18–19, breadth $6\frac{1}{4}$–$6\frac{1}{2}$ millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

One pair. Allied to *C. childreni*, but smaller, less elongate, more shining, and more sparsely pubescent in the male sex; the elytra with much more distinct costæ, the second curving round to the suture posteriorly, and the interspaces between the irregular rows of punctures very much smoother, the thorax more parallel behind.

3. **Callirrhipis obsoleta.** (Tab. XXIV. fig. 10, genitalia, ♂.)

♂. Very elongate, slightly shining; fuscous, paler beneath, the head and prothorax sometimes black, the antennæ ferruginous, with the basal joint infuscate, the legs brown, with the tarsi obscure ferruginous; somewhat thickly clothed with fine yellowish-cinereous pubescence. Head closely punctured, transversely depressed in front and canaliculate on the vertex, the eyes large and prominent; antennæ with the rami on the third and following joints very elongate. Prothorax broader than long, rapidly narrowing from a little before the base to the apex, the sides slightly rounded behind; the surface closely, coarsely punctate, more or less distinctly canaliculate, and usually obsoletely foveate on either side of the disc about the middle. Elytra very elongate, widest beyond the middle; each with four raised lines or costæ, the second considerably raised from the middle onwards and extending uninterruptedly round to the suture near the apex, the others not very distinct, the third and fourth abbreviated and sometimes obsolete; the rest of the surface rather coarsely subseriate-punctate. Beneath thickly, finely punctate. Legs moderately elongate, the basal joint of the hind tarsi as long as the following two joints united.

Length $12\frac{1}{2}$–16, breadth 4–5 millim.

*Hab.* MEXICO, Toxpam, Cordova (*Sallé*), Jalapa (*Höge*).

Five males. Allied to *C. carinifer*, but much smaller and less robust, with the frontal excavation transverse and rather shallow, the second elytral costa much less raised and the others more distinct, the thoracic foveæ shallow or obsolete, the antennal rami shorter, &c. From *C. mexicana* (♂) it may be separated by the form of the second elytral costa, which in the present species curves round to the suture behind, and the shallow thoracic foveæ. From *C. dilaticollis* it differs in the less deeply excavate front, the less dilated thorax, and the shallow thoracic foveæ.

In one of the Toxpam examples the eyes are smaller and the antennal rami less

elongate than in the others; this insect is labelled *C. vestita*, Lap., in the Sallé collection, but it does not agree with the description of that species.

### 4. **Callirrhipis unicostata.** (Tab. XXIV. figg. 11, ♂; 12, ♀; 12 *a*, antenna, ♀.)

? *Callirhipis* (*Zenoa*) *unicostata* (Guér.), Lacord. Gen. Col. iv. p. 251 nota (sine descr.) (♀)[1].

♂. Elongate, rather narrow, slightly shining; fuscous or reddish-brown, the antennæ pale ferruginous, with the basal joint darker, the legs ferruginous or brown; rather sparsely clothed with fine fulvous pubescence. Head thickly punctured, grooved and deeply excavate in front and also deeply canaliculate on the vertex, the eyes very large and prominent; antennæ with the rami on the third and following joints very elongate. Prothorax broader than long, rapidly and obliquely narrowing from the basal third forwards, a little dilated and rounded at the sides behind; the surface closely punctured, deeply canaliculate, and more or less distinctly foveate on either side of the disc about the middle. Elytra moderately elongate, each with four costæ—the first becoming more distinct towards the base and obsolete behind, the second sharply raised beyond the middle and extending round to the suture behind, the third and fourth indistinct or sometimes nearly obsolete, the second and third confluent about the middle in one specimen; the rest of the surface coarsely, subseriately punctate, the punctures becoming very coarse and deep towards the base; the disc from the middle to the apex here and there transversely wrinkled. Beneath thickly, finely punctate. Legs moderately long; the basal joint of the hind tarsi as long as the following two joints united.

♀. Larger and more robust, shining, glabrous; fusco-castaneous or castaneous, the head and prothorax sometimes piceous; above and beneath much more sparsely punctured, the punctuation of the elytra not becoming coarser towards the base; the eyes smaller and less prominent; the antennæ with the third joint broadly subtriangular, the following joints shortly and stoutly pectinate, the eleventh short, not longer than the tenth; the elytra dilated beyond the middle, the second costa less raised; the legs more elongate, the prothoracic foveæ deep.

Length $10\frac{1}{4}$–16, breadth $1\frac{1}{5}$–$5\frac{2}{3}$ millim.

*Hab.* Costa Rica, Rio Sucio, Volcan de Irazu (*Rogers*: ♀); Panama, Bugaba, Volcan de Chiriqui (*Champion*: ♂).—Colombia[1].

Five males from the State of Panama and five females from Costa Rica. This insect, which possibly belongs to the species mentioned by Lacordaire[1] under the name of *C. unicostata*, very closely resembles *C. dilaticollis* in both sexes. The males may be distinguished from the corresponding sex of that species by the less dilated thorax, the relatively shorter and more coarsely punctured elytra, with the punctures becoming still coarser towards the base, and the less elongate legs; the females by the shorter and stouter pectinations of the antennæ (differing in this respect from all the other Central-American species), and, more especially, by the much less elongate apical joint. The thoracic foveæ are shallow or indistinct in some of the males, in which sex the elytra are very coarsely punctured towards the base.

An allied form is found in the Antilles.

### 5. **Callirrhipis dilaticollis.** (Tab. XXIV. figg. 13, ♂; 14, ♀; 14 *a*, antenna, ♀.)

♂. Very elongate, rather depressed, slightly shining; fuscous, the head and prothorax sometimes darker, the legs brown or reddish-brown, with the tarsi obscure ferruginous, the antennæ brownish-ferruginous, with the basal joint darker; rather sparsely clothed with fine, fulvo-cinereous pubescence. Head densely

punctured, grooved and deeply excavate in front and also deeply canaliculate on the vertex, the eyes very large and prominent; antennæ with the rami on the third and following joints very elongate. Prothorax transverse, strongly dilated behind, constricted at the middle, and rapidly narrowing thence to the apex, widest a little before the base; the surface densely, somewhat coarsely punctate, canaliculate, depressed in the centre before the base, and deeply foveate on either side of the disc about the middle. Elytra very elongate, at the base not wider than the base of the prothorax, widest beyond the middle; each with three or four faint costæ, the second acutely raised from the middle and extending round to the suture behind, the outer ones indistinct and sometimes almost obsolete; the rest of the surface moderately coarsely subseriate-punctate, with the interspaces rugulose; the disc from the middle to the apex here and there transversely wrinkled. Beneath closely, finely punctate. Legs moderately elongate; the basal joint of the hind tarsi fully as long as the following two joints united.

♀. Larger and more robust, glabrous above and nearly so beneath; above and beneath much more sparsely punctured; the antennæ pectinate from the third joint, the eleventh elongate, longer than the tenth; the eyes smaller and less prominent; the elytra dilated beyond the middle.

Length $12\frac{1}{2}$–$16\frac{1}{2}$, breadth $3\frac{2}{3}$–$5\frac{2}{3}$ millim.

*Hab.* GUATEMALA, Sinanja and Senahu in Vera Paz, Capetillo (*Champion*).

Three males from Vera Paz and a female from Capetillo. The chief characters of *C. dilaticollis* are the strongly dilated basal portion of the thorax, which is widest a little before the base, the grooved and deeply excavate front, the moderately elongate antennal rami in the males (much shorter than in *C. carinifer* &c.), and the sharply raised second elytral costa, which extends round to the suture behind. This ridge is less raised than in *C. carinifer*, and also less curved, the other costæ being, on the contrary, more distinct; the elytral pnnctuation, too, is much coarser in both sexes. The males of the present species vary a good deal in width.

## 6. Callirrhipis childreni.

♂. *Callirhipis childreni*, Gray, in Griffith's Anim. Kingd. i. p. 365, t. 39. fig. 1, t. 61. figg. 1 *a*–1 *h* (1832) [1]; Laporte, Ann. Soc. Ent. Fr. 1834, p. 254 [2].

♂. Very elongate, broad, robust, slightly shining, brownish-black, above and beneath somewhat thickly clothed with fine, decumbent, yellowish-cinereous pubescence; the antennæ, the two basal joints excepted, brownish-ferruginous. Head densely punctured, grooved and deeply excavate in front, the eyes very large and prominent; antennæ with the rami on the third and following joints excessively elongate. Prothorax at the base very much broader than long, slightly dilated behind, and rapidly narrowing thence to the apex, strongly constricted at the sides beneath in front, with the lower anterior angles prominent and visible from above; the surface densely, moderately finely punctate, deeply foveate on either side of the disc about the middle, and also depressed in the centre before the base. Elytra very elongate, broader than the prothorax; each with four extremely faint costæ, the outer one extending round to the suture and connected with the others behind; the rest of the surface subseriate-punctate, with the interspaces rugulose and thickly, minutely punctulate. Beneath thickly punctured. Legs elongate, moderately stout, the basal joint of the hind tarsi as long as the following two joints united; the femora with a dense fringe of short hairs beneath.

Length 23, breadth $7\frac{1}{2}$ millim.

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).—BRAZIL [1] [2].

Two males, agreeing with the type in the British Museum. The insect is not described by Gray or Laporte. It is the largest of the species inhabiting our region.

and easily separable from the allied forms by the very faint elytral costæ, with the interspaces between the subseriate punctures thickly, minutely punctulate. The description is taken from the Central-American specimens. The type has much paler elytra.

### 7. **Callirrhipis vestita.** (Tab. XXIV. figg. 15, ♂ ; 16, ♀ ; 16 *a*, antenna, ♀ .)

♂. *Callirhipis vestita,* Laporte, Ann. Soc. Ent. Fr. 1834, p. 252[1].

♂. Very elongate, narrow, subcylindrical, dull ; variable in colour—pitchy-black, fuscous, or brown, the head and prothorax sometimes rufescent or rufescent with a black median vitta, ferruginous with the elytra brownish-testaceous in pale specimens ; the antennæ and legs ferruginous or brown ; thickly clothed with fine, silky, decumbent yellowish or yellowish-cinereous pubescence, which is transversely or obliquely combed inwards on the inner half of each elytron. Head densely, rugulosely punctured, feebly excavate in front, the vertex canaliculate, the eyes moderately prominent, rather small ; antennæ with the rami on the third and following joints very elongate. Prothorax transverse, a little dilated behind, rapidly narrowing forwards, the sides more or less sinuous ; the surface densely, rugulosely punctate, shallowly canaliculate, the channel sometimes widening at the base, and usually with a deep fovea on either side of the disc about the middle, these foveæ sometimes shallow or indistinct. Elytra very elongate, subparallel to beyond the middle ; each with four fine costæ, the exterior one sometimes indistinct or visible towards the apex only, and connected behind with the third, or the second and third, the second sometimes extending to the suture behind ; the intervals between the costæ closely, coarsely, confusedly punctate, with the interspaces rugulose. Beneath thickly punctured. Legs rather elongate, the intermediate tibiæ slightly curved ; the femora with a dense fringe of hairs beneath.

Length $9\frac{1}{2}$–$14\frac{1}{2}$, breadth 2–$4\frac{1}{2}$ millim.

♀. Larger, broader, and less parallel ; black, the antennæ, the two basal joints excepted, and the basal margin of the prothorax sometimes brownish ; glabrous above and very sparsely pubescent beneath ; the antennæ strongly pectinate from the third joint ; the elytra flattened on the disc, widest beyond the middle, slightly shining, and more coarsely and more rugosely punctured ; the under surface much more sparsely punctured ; the femora with a few hairs only beneath.

Length 14–23, breadth $4\frac{3}{4}$–$5\frac{3}{4}$ millim.

*Hab.* Mexico [1], Orizaba, Juquila (*Sallé*), Omilteme and Amula in Guerrero 6000 to 8000 feet (*H. H. Smith*), Misantla and Jalapa (*Höge*) ; Nicaragua. Chontales (*Belt*).

This is the only Mexican *Callirrhipis* that can be referred to *C. vestita*, Laporte, agreeing as it does in the general shape and pubescence of the males, and notwithstanding certain discrepancies between our specimens and the description as regards the form and sculpture of the thorax, &c., there can be little doubt that the identification is correct.

Fourteen males and five females are before me, including a male and two females from Orizaba, indicated by Sallé as belonging to the same species. The three specimens from Guerrero are females, and the one from Chontales is a male ; one of the former, from Amula, has the third and following antennal joints much stouter than usual, and it may prove to belong to another species. The two foveæ on the thorax are not always distinct. The comparatively dense pubescence and the long and narrow shape of the males chiefly distinguish this species from the allied forms. A male from Juquila and a female from Omilteme are figured.

### 8. **Callirrhipis mexicana.** (Tab. XXIV. figg. 17, ♂; 18, ♀, antenna.)

♂. Very elongate, slightly shining; fuscous, paler beneath, the antennæ ferruginous, with the basal joint darker, the legs brown, with the tarsi obscure ferruginous; rather sparsely clothed with fulvo-cinereous pubescence. Head thickly punctured, transversely depressed in front and canaliculate on the vertex, the eyes large and prominent; antennæ with the rami on the third and following joints very elongate. Prothorax broader than long, narrowing from the base, the sides a little constricted at the middle and slightly rounded behind; the surface densely, coarsely punctate, more or less distinctly canaliculate, and very deeply foveate on either side of the disc about the middle. Elytra very elongate, distinctly wider than the prothorax at the base, widest beyond the middle; each with four costæ—the first faint, the second becoming sharply defined beyond the middle, the third and fourth distinct, the third abbreviated or coalescent with the fourth behind, the second and fourth almost coalescent before the apex; the rest of the surface rather coarsely subseriate-punctate, with the interspaces rugulose. Beneath thickly, finely punctate. Legs moderately elongate; the basal joint of the hind tarsi as long as the following two joints united.

♀. More robust, shining, glabrous and more sparsely punctured above; blackish-brown, the head and prothorax sometimes black, paler beneath; the eyes smaller and less prominent; the antennæ strongly pectinate from the third joint; the elytra more dilated beyond the middle, and with the third and fourth costæ sharply raised behind.

Length $12\frac{1}{2}$–18, breadth 4–$6\frac{1}{4}$ millim.

*Hab.* Mexico, Toxpam, Cordova (*Sallé*).

Two males and three females. In this species (as in *C. vestita*) the second elytral costa is less curved behind than in many of the allied forms, and it becomes almost obliterated before the suture is reached; the third and fourth costæ, too, are more prominent than usual, especially in the females, in which sex they are as much raised as the second. The females vary greatly in size. The males are more sparsely pubescent than the corresponding sex of *C. vestita*. *C. mexicana* (♂) differs from the Brazilian *C. inconspicua*, Waterh. (♂) (?=*goryi*, Lap.), in having less elongate and more feebly costate elytra, smaller and less prominent eyes, and shorter legs. *C. simplex*, Waterh., from Brazil, the male only of which is known, has a longer thorax, this being less dilated behind and without distinct foveæ.

### 9. **Callirrhipis venosa.** (Tab. XXIV. figg. 19, ♂; 19 *a*, antenna.)

♂. Very elongate, rather narrow, slightly shining; pitchy-black, the head, femora, claws, and under surface in part, obscurely rufescent, the antennæ blackish-brown; above somewhat thickly clothed with fine fulvo-cinereous pubescence, beneath thickly cinereo-pubescent. Head densely, rugulosely punctured, transversely depressed in front, the vertex deeply canaliculate, the eyes not prominent; antennæ with the rami on the third and following joints stout and comparatively short. Prothorax broader than long, a little dilated behind, and rapidly narrowing forwards, slightly constricted at the middle, the sides appearing sinuate; the surface densely, rugulosely punctate, finely canaliculate, and with a deep oblique fovea on either side of the disc about the middle. Elytra very elongate, subparallel; each with four rather strong costæ, connected with each other and with the suture by transverse or oblique raised lines, the interspaces thickly, moderately coarsely punctate. Beneath densely punctured. Legs moderately elongate, rather stout; the first joint of the hind tarsi short, shorter than the following two joints united.

Length $12\frac{1}{3}$, breadth $3\frac{3}{4}$ millim.

*Hab.* Mexico, Yolos in Oaxaca (*Sallé*).

One example. Differs from all the allied forms in the reticulate arrangement of

the elytral costæ, and in the comparatively short and stout rami of the antennæ in the male, the rami being only a little longer than in the females of *C. valida*, *C. laportei*, &c.

### 10. **Callirrhipis tenuipes.** (Tab. XXIV. fig. 26, ♂.)

♂. Very elongate, narrow, depressed, slightly shining; pitchy-black, the basal margin of the prothorax, the scutellum, antennæ, legs, and under surface fusco-ferruginous; somewhat thickly clothed with fine, appressed, silky, yellowish-cinereous pubescence. Head thickly, finely punctate, grooved and excavate in front and canaliculate on the vertex, the eyes large and very prominent; antennæ with the rami on the third and following joints very elongate. Prothorax transverse, strongly dilated behind, the anterior portion narrow; the surface thickly, finely punctate, canaliculate in front, depressed in the centre behind, and deeply foveate on either side of the disc about the middle. Elytra very elongate, subparallel to beyond the middle, much wider than the prothorax; each with a single sharp costa on the middle of the disc, obsolete in front and curving round to the suture near the apex, and also with indications of two faint raised lines; the rest of the surface rugulose and with scattered fine punctures, between which other excessively minute punctures are visible; the disc here and there transversely wrinkled. Beneath densely, finely punctate. Legs long and slender; the basal joint of the hind tarsi elongate, nearly as long as the following three joints united; the hind tibiæ sinuous.

Length $12\frac{1}{2}$, breadth $3\frac{1}{2}$ millim.

*Hab.* Mexico (*Sallé*).

A single specimen in the Sallé collection, without more definite locality. *C. tenuipes* may be known from all our other species by the long and slender legs, the basal joint of the tarsi being unusually elongate; the thorax, too, is very narrow in front and strongly dilated behind.

### 11. **Callirrhipis laportei.** (Tab. XXIV. figg. 20–23, ♂; 24, 25, ♀; 25 *a*, antenna, ♀.)

♂. *Callirhipis laportei*, Hope, Trans. Ent. Soc. Lond. iv. p. 181, t. 13. fig. 1 (1846)[1]; C. O. Waterh. Trans. Ent. Soc. Lond. 1877, p. 393[2].

*Hab.* Mexico, Panistlahuaca in Oaxaca (*Sallé*), Tapachula in Chiapas (*Höge*); Guatemala, Coban[1] (*Mus. Oxon.*), Zapote (*Champion*); Nicaragua (*Mus. Brit.*[2]), Chontales (*Belt*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Bugaba (*Champion*).

Originally described from a single male example from Coban, a locality supposed by Hope to be in Colombia, instead of in Guatemala.

We have received eighteen males and eight females (varying from 9–15 millim. in length), one of the former (from Zapote) merely differing from Hope's figure in having the thorax almost immaculate, and the base of the antennæ and the femora darker. The insect is extremely variable in colour in both sexes, and the basal joint of the antennæ and the femora to near the tip are sometimes ochraceous or rufo-testaceous. The following are the chief colour-varieties:—

*α*. Head, prothorax, and elytra testaceous-red or ochraceous, a spot on the middle of the vertex and a median vitta on the prothorax sometimes black. (♂ ♀.) (Fig. 25, ♀.)—Guatemala, Nicaragua, Panama.

β. Reddish-ochraceous, the prothorax sometimes (as in the type) with a narrow median vitta and a line at the sides black, the elytra with a common oblong mark behind the scutellum, an oblong patch at the sides below the shoulder, and about the apical two-fifths, black. (♂.) (Fig. 20, ♂.)—Guatemala.

γ. Testaceous-red, the elytra sometimes yellowish, a patch on the vertex, a median vitta on the prothorax, a common oblong or triangular patch at the base of the elytra, and the apex of the latter to a greater or less extent (sometimes to near the middle), the elytral markings often connected along the suture, black. (♂ ♀.) (Figg. 21, 22, ♂; 24, ♀.)—Mexico, Nicaragua, Costa Rica.

δ. Head and prothorax testaceous-red or ochraceous, a spot on the vertex and a median vitta on the prothorax sometimes black, the elytra entirely black. (♂.) (Fig. 23, ♂.)—Guatemala, Costa Rica.

The head and thorax are densely, rather finely, rugulosely punctured; the vertex is canaliculate down the middle; the eyes are small and prominent in both sexes; the thorax is strongly transverse, rapidly narrowed from a little before the base, appearing slightly dilated posteriorly, transversely depressed on either side behind the middle, the depression ending inwards in a deep fovea, and more or less distinctly canaliculate down the centre. Each elytron has four costæ, the external one being sometimes faint or distinct towards the apex only, and the second longer and more prominent than the others, extending round to the suture behind in some specimens; the interspaces are closely and coarsely punctured, the punctures being much coarser and deeper in the female than in the male. The legs are rather short and stout; the tibiæ are somewhat dilated and sinuous, the intermediate pair a little bowed; the basal joint of the hind tarsi is short. The males are finely pubescent above; they have the antennal rami very elongate. The females are larger and more robust, and when fresh slightly pubescent above, the pubescence, however, being easily abraded (six out of the eight examples examined are glabrous); they have the antennæ strongly pectinate from the third joint.

A single discoloured, mutilated, male example from Escuintla, Guatemala (*Conradt*), perhaps belongs here; it is obscure rufo-piceous in colour, and apparently has a broad black vitta on either side of the disc of the thorax, the elytral interspaces are rather sparsely punctured, and the thorax is faintly carinate down the centre of the median channel. *C. laportei* approaches the genus *Simianus* (Blanch.), as defined by Fairmaire *; it is connected with the typical *Callirrhipis* by intermediate forms.

We figure six examples: a female of the var. α, from Bugaba; a male of each of the vars. β and δ, from Zapote; two extreme forms of the var. γ, both males, one from Irazu and the other from Panistlahuaca; and a female of the var. γ, from Chontales.

* Notes Leyd. Mus. ix. p. 154 (1887).

## PTORTHOCERA.

Antennæ (♂) elongate, with the basal joint stout and rather short, 2 very small, transverse, joints 3–10 each with a moderately long, oblique ramus arising from the base, the rami gradually increasing in length, 11 about as long as the ramus on the preceding joint; eyes large, moderately prominent; gular appendages well developed; prothorax transverse, trapezoidal, the apex deeply sinuate on either side opposite the eyes, the anterior angles produced in front, the hind angles also prominent; elytra with ten rows of punctures, separated by convex, rather broad interspaces; legs moderately elongate, rather slender; tarsi simple, with a short onychium, the basal joint about as long as the following three joints united, the latter gradually decreasing in length; body glabrous in the ♂; the other characters as in *Callirrhipis*.

The single species from which the above characters are taken differs from *Callirrhipis* in having the ramus on the third and following antennal joints arising from the base (instead of from the apex) in the male, the basal joint also being shorter; the thorax is less compressed at the sides anteriorly, with prominent, less declivous anterior angles; the elytra have the interspaces between the rows of punctures rather broadly raised; and the body is glabrous in the male. The antennal rami are of about the same length as those of the same sex of *Callirrhipis venosa*. From *Zenoa*, Say, a genus containing a single species from North America, in which the antennæ are described as subpectinate in the male and serrate in the female, it may be separated by the form of the antennæ, the sculpture of the elytra, the short onychium, &c. Males only have been found.

1. **Ptorthocera calva.** (Tab. XXIV. figg. 27, ♂; 27 *a*, antenna; 27 *b*, genitalia.)

♂. Elongate, narrow, somewhat cylindrical, shining, black or castaneous, the antennæ brownish, with the basal joint darker, the legs nigro-piceous or rufo-castaneous and slightly pubescent. Head longitudinally grooved and excavate in the middle in front, canaliculate on the vertex, sparsely, somewhat finely punctate. Prothorax sparsely, rather finely punctate, canaliculate, and depressed in the middle and on either side at the base; in one specimen strongly, transversely plicate on either side before the base, and with the margins deeply excised. Scutellum almost smooth. Elytra elongate, considerably wider than the prothorax, subparallel to the middle, and conjointly rounded at the apex; coarsely seriate-punctate, the interspaces smooth and convex throughout, becoming partly confluent towards the apex. Beneath sparsely punctured.

Length $9\frac{1}{2}$–$10\frac{1}{2}$, breadth 3–$3\frac{2}{3}$ millim.

*Hab.* Guatemala, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Belt*).

One male from each locality. The Guatemalan specimen differs from the other in having the thorax strongly transversely plicate on either side before the base, and the antennal rami less elongate. There can be little doubt, however, that the two insects belong to the same species. The Nicaraguan specimen is figured.

## SANDALUS.

*Sandalus*, Knoch, Neue Beytr. p. 131 (1801); Lacordaire, Gen. Col. iv. p. 253; Horn, Trans. Am. Ent. Soc. ix. p. 86.

A genus containing fifteen described species—four from the United States of North

America, three from South America, one from Japan, and seven from S. Africa. Two are now added from Mexico. As in *Callirrhipis*, &c., the females are very dissimilar to the males, and have in several cases been described under different names.

### 1. **Sandalus nietoi.** (Tab. XXIV. figg. 28, ♀; 28 *a*, antenna, ♀; 29, ♂.)

*Sandalus nietoi*, Sallé, in litt.

♂. Moderately elongate, very broad and robust, opaque; head black, ferrugineo-testaceous in front and behind; the prothorax ferrugineo-testaceous, usually with a black mark on either side of the disc at the base, the two marks sometimes connected along the basal margin; the scutellum black; the elytra black, with the base, the suture for some distance below the scutellum, and the sides narrowly to about the middle, ferrugineo-testaceous; the under surface varying in colour from almost entirely ferrugineo-testaceous to black; the antennæ black, the rami sometimes ferruginous; the apices of the femora, the tibiæ, and tarsi black, the rest of the femora ferrugineo-testaceous; above and beneath thickly clothed with velvety pubescence, which is fuscous on the dark portions of the elytra and fulvous or golden elsewhere. Head very densely, minutely punctate, grooved in front, and longitudinally carinate in the centre between the eyes, the sides of the front strongly raised above the points of insertion of the antennæ, the eyes moderately prominent; antennæ with joints 2–11 very short, 3–11 each with a very long flattened ramus, together forming an elongate, compact, lamellate club. Prothorax convex, transverse, rapidly, arcuately narrowing from a little before the base, the latter trisinuate; the surface densely, minutely punctate, with scattered intermixed coarse punctures, canaliculate, and very deeply transversely excavate in the middle just behind the anterior margin, and also with a transverse depression on either side of the median lobe at the base. Scutellum densely, minutely punctate. Elytra considerably wider than the prothorax, moderately long, gradually widening to beyond the middle, and conjointly rounded behind; each with four faint raised lines or costæ, the first abbreviated behind, the suture also raised, the rest of the surface closely, coarsely, subseriate-punctate, with the interspaces shagreened. Beneath densely, very finely punctate. Legs very stout, the tibiæ dilated externally at the apex, the tarsal joints 2–4 very deeply emarginate, the lamellæ long.

♀. Larger and more elongate, less opaque, more sparsely pubescent, the larger punctures on the prothorax and the elytral punctuation coarser; the pubescence above and beneath paler, in great part yellowish-cinereous; the black marks on the prothorax more extended and connected behind; the elytra with the suture and sides ferrugineo-testaceous to the tip, or to near the tip; the antennæ with joints 3–7 very acutely serrate, 8–10 wider and pectinate, 11 flattened and somewhat oval.

Length $12\frac{1}{2}$–$20\frac{1}{2}$, breadth $5\frac{7}{8}$–$9\frac{1}{2}$ millim.

*Hab.* Mexico, Orizaba (*Sallé*), Jalapa and Misantla (*Höge*).

Eleven males and three females, all from the State of Vera Cruz. This conspicuous species somewhat resembles the Brazilian *Rhipidocera marginata*, Kirby. In the female joints 3–7 of the antennæ gradually become more acutely serrate, 8–10 being still more produced on the inner side, the last four joints forming a sort of club. A female from Jalapa and a male from Orizaba are figured.

### 2. **Sandalus conicicollis.** (Tab. XXIV. fig. 30, ♀.)

♂. Moderately elongate, broad, robust, rather dull; the head and mandibles black, the antennæ (the basal joint excepted) and prothorax obscure rufous, the elytra brown, the scutellum, legs, and under surface black; thickly pubescent, the pubescence fulvous above and fulvo-cinereous beneath. Head very densely, minutely punctate, the mandibles also thickly punctured, except at the tip, the eyes not very prominent; antennæ with joints 2–11 very short, 3–11 each with a very long flattened ramus, together forming an elongate, compact, lamellate club. Prothorax convex, conical, much broader than long; densely, minutely

punctate, with intermixed slightly coarser punctures, obsoletely canaliculate, broadly transversely depressed on the disc before the apex and also transversely depressed before the base. Scutellum densely, minutely punctate. Elytra very much wider than the prothorax, elongate, widening to beyond the middle, and conjointly rounded at the apex, constricted at the base, with the humeri prominent and rounded; each with five oblique raised costæ, the inner one abbreviated behind and connected posteriorly with the raised suture by three transverse raised lines, the outer two indistinct, the interspaces very coarsely and closely subseriate-punctate, the first and second with two rows of punctures only. Beneath densely, minutely punctate. Legs moderately stout, the tibiæ strongly dilated externally at the apex, the tarsal joints 2–4 very deeply emarginate, the lamellæ long.

Length $14\frac{1}{2}$, breadth 6 millim.

*Hab.* Mexico, Ventanas in Durango (*Höge*).

One somewhat abraded male example. Differs from *S. nietoi* in the narrow, conical thorax, the longer and much more coarsely punctured elytra, with more prominent costæ, and the longer and more slender legs. The elytra resemble those of the females of *S. nietoi* in shape. *S. conicicollis* is allied to the North-American *S. niger*, Knoch (= *knochi*, Guér.); but, to judge from the description, it appears to differ from that species in having the head more finely punctured, and the larger punctures on the thorax less distinct, these being not much coarser than the others. If Guérin's figure (Spec. et Icon. livr. i. no. 2, tab. fig. 13) of the male of *S. knochi* is correct, the present insect has the elytra much more coarsely and less densely punctate.

## Fam. DASCILLIDÆ *.

Subfam. *ARTEMATOPINÆ.*

### ARTEMATOPUS.

*Artematopus*, Perty, Del. Anim. art. Brasil. p. 115 (1830); Lacordaire, Gen. Col. iv. p. 261.
*Lairus*, Castelnau, Hist. Nat. Ins. Col. i. p. 258 (1840).

This peculiar genus is confined to Tropical America, ranging as far north as Nicaragua. Twenty species have been described, all from south of the Isthmus of Panama. Eight are now recorded from within our limits. The South-American forms, of which there are many unnamed in collections, need a thorough revision, the sexual characters of many of the described species not having been properly understood. Lacordaire, too, quite overlooked the form of the tarsal lamellæ, joints 2–4 having each two long lamellæ (not one large one) beneath, as in the genus *Sandalus*. The Central-American forms belong to two well-defined groups: one with the antennæ moderately long, and with the third joint about twice as long as the second, in both sexes; the other with the antennæ as long as, or longer than, the body, and the third joint very small, in the males, and moderately long, and with the third joint much longer than the second, in the females. The antennæ also differ in

* By G. C. Champion.

form in the two groups; in one of the species of the second group they are clothed on all sides with long bristles, like a bottle-brush. The prosternal process is similarly formed in the species here described. The females of some of them are much larger than the males. These insects are found upon bushes in dry places, chiefly on the savanas of the "tierra caliente."

*a*. Antennæ about reaching the middle of the elytra in the males, very little shorter in the females, filiform, or slightly tapering towards the tip, joint 3 twice as long as 2 in both sexes.
  *a'*. Elytra very coarsely punctate-striate throughout, usually with black spots, which are sometimes coalescent . . . . . *irroratus.*
  *b'*. Elytra more finely punctate-striate on the disc than at the sides.
    *a''*. Prothorax thickly punctured; elytra with an oblique black stripe extending from the shoulder to near the apex . . . . . *obliquus.*
    *b''*. Prothorax very sparsely punctured; elytra in great part black . . . . . *scapularis.*
*b*. Antennæ as long as or longer than the body, and with joints 2 and 3 very small and subequal, in the males, much shorter, and with joint 3 considerably longer than 2, in the females.
  *c'*. Antennæ with the joints from the fourth slightly concave without and somewhat dilated towards the tip within, clothed with long fine hairs.
    *c''*. Prothorax gradually narrowing from the base, feebly rounded at the sides; antennæ about reaching the middle of the elytra in the female.
      *a'''*. Prothorax densely punctate . . . . . *puncticollis.*
      *b'''*. Prothorax sparsely punctate . . . . . *rufescens.*
    *d''*. Prothorax rapidly narrowing from the base, thickly punctured; antennæ comparatively short in the female . . . . . *costaricensis.*
    *e''*. Prothorax rounded at the sides, coarsely, closely punctate; antennæ about reaching the middle of the elytra in the female . . . . . *rotundicollis.*
  *d'*. Antennæ with the joints from the fourth straight without and a little dilated towards the tip within, clothed with very long bristly hairs . . . . . *seticornis.*

1. **Artematopus irroratus.** (Tab. XXVI. figg. 1, ♂; 1 *a*, antenna; 1 *b*, genitalia.)

Oblong-oval, convex, shining; head, prothorax, and scutellum rufo-testaceous or rufo-castaneous, the sides of the prothorax testaceous or flavo-testaceous; the elytra testaceous, each with a transverse mark on the disc a little below the base, two marks at about one-third from the apex (placed transversely, one on the disc and one at the side), a small spot on the disc below these, and sometimes another at the shoulder, black or piceous, these markings sometimes partly or entirely obliterated; the antennæ ferruginous, the legs testaceous, the body beneath castaneous or ferruginous, the metasternum darker; rather sparsely clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head thickly, finely punctate; antennæ slender, filiform, becoming a little thinner towards the tip, about reaching to the middle of the elytra in the male, a little shorter in the female, joint 3 more than twice as long as 2, all the joints sparsely clothed with long fine hairs. Prothorax strongly transverse, moderately convex, acutely margined and a little explanate at the sides, the latter gradually, arcuately converging from the base forwards, the apex feebly emarginate on either side; the surface thickly and somewhat coarsely punctate, with indications of a smooth median line. Scutellum obsoletely carinate. Elytra moderately

long, narrowing from the middle, and rather obtuse at the apex; coarsely and deeply punctate-striate, the punctures closely placed and brown in colour; the interstices convex, very sparsely, minutely punctate, and here and there transversely wrinkled. Beneath very sparsely punctured.

*Var.* The basal and post-median marks coalescent, forming a large irregular black patch on the anterior half of each elytron.

Length $6\frac{7}{8}$–$7\frac{7}{8}$, breadth $3\frac{2}{3}$–4 millim. (♂ ♀.)

*Hab.* NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Caldera, and Peña Blanca in Chiriqui (*Champion*).

Nine examples, including the dark variety, the latter being from Bugaba. The single example from Chontales, a pallid male, differs from the others in having the antennæ a little shorter, stouter, and more tapering, but agrees with a Chiriqui male in the form of the genitalia.

This insect is closely allied to *A. urbanus*, Kirsch, from Bogota, a specimen of which is before me *, from which it differs in having the elytra much more coarsely punctate-striate, with the interstices convex (in *A. urbanus* the striæ are shallow, and the interstices are flat on the disc and at the apex). *A. marmoratus* (Cast.), from Cayenne, also appears to be a nearly allied form †, but the diagnosis is too brief for the purposes of identification. A specimen of *A. irroratus* from Caldera is figured.

### 2. **Artematopus obliquus.** (Tab. XXVI. fig. 4, ♂.)

Oblong-oval, convex, shining; head, prothorax, and scutellum obscure testaceous or reddish-brown, the sides of the prothorax, and sometimes the head also in great part, testaceous or flavo-testaceous; the elytra testaceous or flavo-testaceous, each with an oblique black stripe of variable width extending from the shoulder to near the apex; the antennæ and the body beneath ferruginous, the metasternum darker, the legs testaceous; rather sparsely clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head thickly, finely punctate; antennæ slender, filiform, becoming a little thinner towards the tip, reaching nearly or quite to the middle of the elytra in the male, a little shorter in the female, joint 3 twice as long as 2, and about half the length of 4, all the joints sparsely clothed with long fine hairs. Prothorax strongly transverse, moderately convex, slightly explanate at the sides, the latter gradually, arcuately converging from the base forwards, the apex feebly emarginate on either side; the surface thickly and somewhat coarsely punctate, with indications of a smooth median line. Scutellum obsoletely carinate. Elytra moderately long, narrowing from about the middle, obtuse at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and finely punctured and shallow on the disc, the punctures not very closely placed; the interstices convex at the sides, almost flat on the disc, and very sparsely minutely punctate. Beneath very sparsely punctured.

Length 6–7, breadth $3\frac{1}{4}$–4 millim. (♂ ♀.)

*Hab.* NICARAGUA (*Sallé*), Chontales (*Belt*, *Janson*).

Four examples. Allied to *A. irroratus*, but a little smaller and less elongate, the elytra much more finely punctate-striate towards the suture, with an oblique black stripe extending from the shoulder to near the apex. In one specimen (fig. 4) this

* We are indebted to the authorities of the Dresden Museum for the loan of co-types of this and several other species of Dascillidæ described by the late Th. Kirsch.

† A specimen from Ibaque standing under this name in the British Museum differs from our insect in having more elongate elytra.

stripe is very broad throughout, in the others it becomes narrower and evanescent behind.

### 3. **Artematopus scapularis.** (Tab. XXVI. fig. 6.)

Oblong-oval, convex, shining; obscure testaceous, the sides of the prothorax flavo-testaceous, the elytra without about the apical half brownish-black, this colour extending forwards on the disc of each elytron and joining a large black humeral patch (leaving a space at the sides of the ground-colour), the antennæ and the body beneath ferruginous, the legs ferrugineo-testaceous; sparsely clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head sparsely, finely punctate; antennæ reaching to about the middle of the elytra, filiform, tapering a little towards the tip, joint 3 twice as long as 2, and half the length of 4, all the joints sparsely clothed with long fine hairs. Prothorax strongly transverse, moderately convex, slightly explanate at the sides, the latter very gradually converging from the base forwards, the apex feebly emarginate on either side; the surface very sparsely, finely punctate, the punctuation becoming still sparser at the sides, with a smooth slightly raised median line. Elytra moderately long, narrowing from the middle, obtuse at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and more finely punctured and shallower on the disc, the punctures not very closely placed; the interstices convex at the sides and almost flat on the disc, very sparsely, minutely punctate, and here and there transversely wrinkled.

Length 6, breadth $3\frac{1}{2}$ millim.

*Hab.* Panama, Volcan de Chiriqui 4000 feet (*Champion*).

One example, its sex not ascertained. Allied to *A. obliquus*, but differing from it in the more finely and more sparsely punctured thorax, as well as in the colour of the elytra.

### 4. **Artematopus puncticollis.**

♂. Oblong-oval, convex, moderately shining; piceous or reddish-brown, the prothorax darker, the elytra usually with the suture more or less and the sides below the humeri black, the antennæ and legs ferruginous or fusco-ferruginous; thickly clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head densely, finely punctate; antennæ slender, extremely elongate, as long as or longer than the body, joints 2 and 3 very small, equal, 4 more than twice the length of 2 and 3 united, the joints 4–10 slightly concave without, and distinctly dilated at the apex within, all clothed with long fine hairs. Prothorax strongly transverse, convex, gradually narrowing from the base forwards, the apex feebly emarginate on either side; the surface densely, somewhat coarsely punctate. Elytra moderately long, narrowing from the middle, obtuse at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and finely punctured and shallow on the disc, the punctures not very closely placed; the interstices convex at the sides, almost flat on the disc, sparsely, finely punctate and also transversely rugulose.

♀. Oval; antennæ about reaching to the middle of the elytra, joint 3 nearly twice as long as 2.

Length $4\frac{2}{3}$–8, breadth $2\frac{1}{2}$–$4\frac{1}{3}$ millim.

*Hab.* Panama, San Feliz and Tolé in Chiriqui (*Champion*).

Nine males and three females, varying enormously in size, all from the low savana-region bordering the Pacific Ocean. It differs from the other allied Central-American species with a very small third antennal joint in the male in having the thorax densely punctured. There can be no doubt that the males and females described belong to one and the same species, as both sexes were found in each locality. *A. caniceps*, Kirsch, from Bogota, appears to be closely allied to *A. puncticollis*.

### 5. **Artematopus rufescens.** (Tab. XXVI. figg. 2, ♂; 2 *a*, antenna; 2 *b*, prosternum; 2 *c*, genitalia; 3, antenna, ♀.)

♂. Oblong-oval, rather narrow, convex, shining; piceous, fusco-ferruginous, or rufo-testaceous, the prothorax sometimes darker than the elytra, the body beneath and the antennæ rufo-castaneous or ferruginous, the legs obscure testaceous; rather sparsely clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head thickly, rather coarsely punctate, the punctuation becoming sparser on the vertex; antennæ slender, longer than the body, joints 2 and 3 very small, subequal, 4 about five times the length of 3, the joints 4–10 concave without and dilated at the apex within, all clothed with long fine hairs. Prothorax strongly transverse, convex, gradually, arcuately narrowing from the base forwards, the apex feebly emarginate on either side; the surface sparsely, moderately finely punctate, usually with a narrow smooth space down the middle. Scutellum obsoletely carinate in some specimens. Elytra moderately long, narrowing from the middle, conjointly rounded at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and more finely punctured and shallow on the disc; the interstices convex, flatter on the disc, very finely uniseriate-punctate, and here and there transversely wrinkled. Beneath very sparsely, finely punctate.

♀. Antennæ about reaching the middle of the elytra, joint 3 considerably longer than 2.

Length $4\frac{1}{3}$–$6\frac{1}{2}$, breadth $2\frac{1}{8}$–$3\frac{1}{2}$ millim.

*Hab.* Panama, Bugaba, Volcan de Chiriqui, Caldera, David (*Champion*).

Found in plenty in Chiriqui. Smaller, narrower, and usually of a more ferruginous colour than *A. puncticollis*, and differing constantly from that species in the sparsely punctured very shining thorax, the punctures also being finer. The females are generally larger than the males.

### 6. **Artematopus costaricensis.**

♀. Oblong-elliptic, convex, shining; piceous, the head in great part ferruginous, the elytra obscure reddish-brown, with the suture to beyond the middle very broadly and indeterminately, and the sides also, piceous; the antennæ, palpi, and legs ferruginous, the body beneath castaneous; sparsely clothed with yellowish-cinereous pubescence, the upper surface also with long erect hairs. Head closely, coarsely punctate; antennæ very slender, about reaching the basal third of the elytra, joint 3 nearly twice as long as 2, and half the length of 4, the joints from the fourth concave without and somewhat rounded within, each slightly widened outwards. Prothorax strongly transverse, moderately convex, rapidly and somewhat arcuately narrowing from the base forwards, the apex rather deeply emarginate on either side; the surface thickly, rather coarsely punctate, the base feebly emarginate in the centre. Elytra moderately long, narrowing from about the middle, obtuse at the apex; punctate-striate, the striæ coarsely punctured and rather deep at the sides, and finely punctured and shallow near the suture; the interstices convex at the sides, nearly flat on the disc, minutely uniseriate-punctate, and also transversely wrinkled.

Length $4\frac{1}{2}$, breadth $2\frac{1}{2}$ millim.

*Hab.* Costa Rica, Caché (*Rogers*).

One specimen. This insect has shorter and more slender antennæ than the females of the allied forms. The thorax is less transverse and more narrowed in front than in *A. rufescens*, and is also more closely punctured.

### 7. **Artematopus rotundicollis.**

♂. Oblong- or elongate-oval, convex, shining; piceous or reddish-brown, the metasternum usually darker than the abdomen, the antennæ piceous or ferruginous, the legs ferruginous or obscure testaceous, the tibiæ

sometimes darker; thickly clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head densely, coarsely punctate; antennæ slender, longer than the body, joints 2 and 3 very small, subequal, the joints 4–10 concave without and dilated at the apex within, all clothed with long fine hairs. Prothorax strongly transverse, convex, rounded at the sides, narrowing from a little before the base to the apex (usually appearing slightly narrowed behind), the apex feebly emarginate on either side; the surface thickly, coarsely punctate, with indications of a smooth raised median line at the base. Scutellum closely punctured, and sometimes obsoletely carinate. Elytra moderately long, narrowing from about the middle, obtuse at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and shallow and more finely punctured on the disc; the interstices convex, flatter on the disc, very distinctly punctured, and also transversely wrinkled. Beneath very sparsely punctured.

♀. Antennæ reaching to a little beyond the middle of the elytra, joint 3 twice as long as 2.

Length $4\frac{1}{3}$–$7\frac{1}{3}$, breadth $2\frac{1}{4}$–$3\frac{2}{3}$ millim.

*Hab.* Nicaragua, Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).

Found in abundance at Bugaba. More elongate and narrower than *A. puncticollis*, the thorax more rounded at the sides, less densely punctured, and more shining, the elytra more coarsely punctate-striate on the disc, and with the interstitial punctures coarser. More parallel than *A. rufescens*, with the thorax more rounded at the sides, and much more coarsely and closely punctured, the interstitial punctuation of the elytra not so fine. *A. rotundicollis* approaches *A. bogotanus*, Kirsch, from Bogota; but it has the thorax and the elytral striæ much more coarsely punctured, and the elytra with convex interstices.

### 8. **Artematopus seticornis.** (Tab. XXVI. figg. 5, ♂; 5 *a*, antenna.)

♂. Oval, very convex, shining; piceous or reddish-brown, the scutellum and the elytra with the suture to beyond the middle broadly and indeterminately, and usually the sides also, black, the sutural stripe sometimes narrower and sometimes greatly extended; the antennæ ferruginous, the legs ferruginous or obscure testaceous, the tibiæ sometimes darker; sparsely clothed with yellowish-cinereous pubescence, the upper surface with long erect hairs intermixed. Head very broad, densely, coarsely punctate; antennæ slender, longer than the body, joints 2 and 3 very small, equal, 4 five times as long as 3, 4–10 slightly dilated at the apex within, all clothed with very long, projecting bristly hairs. Prothorax very convex, strongly transverse, rounded at the sides, the latter converging from about the basal third forwards, the base distinctly emarginate in front of the scutellum, the apex rather deeply emarginate on either side; the surface thickly, rather coarsely punctate, and sometimes obsoletely canaliculate in front. Elytra comparatively short, narrowing from about the middle, truncate at the apex; punctate-striate, the striæ very coarsely punctured and deep at the sides, and more finely punctured and shallow on the disc; the interstices convex, flatter on the disc, minutely, uniseriate-punctate, and also transversely wrinkled. Beneath very sparsely punctured.

Length $3\frac{2}{3}$–$4\frac{1}{2}$, breadth 2–$2\frac{1}{2}$ millim.

*Hab.* Panama, Bugaba (*Champion*).

Eight examples, all males. Differs from all the other Central-American species in its short form and very convex thorax, as well as in the very long bristly hairs on the joints of the antennæ, these hairs being very conspicuous, and nearly as long as the erect ones on the elytra, resembling those of a bottle-brush. The antennal joints 4–10 are nearly straight on their outer edge. The thorax is distinctly emarginate in

the centre at the base. The sutural stripe varies in width, it being broadly extended in some specimens.

## CTESIBIUS.

Head broad, vertical, produced in front, very deeply sunk into the prothorax, the eyes rounded, rather small, and not entirely free; labrum not visible; mandibles very short and curved, the apices visible; apical joint of the maxillary palpi rather stout, subsecuriform, that of the labial palpi subtriangular; antennæ very elongate, slender, joint 1 very stout, 2 short, shorter than 3, 3 shorter than 4, 4–11 long and subequal; prothorax short, completely margined at the sides; scutellum small, transversely triangular; prosternum moderately long before the coxæ, extending broadly between them behind, the process margined on either side between the coxæ, and received by a broad deep notch in the mesosternum, the latter horizontal; anterior coxæ oval, with large trochantin; middle coxæ widely separated, with small trochantin; posterior coxæ separated by the intercoxal process of the abdomen, the coxal plates gradually widened inwards; ventral segments 1–4 short, 5 as long as 2–4 united; tarsi with joints 3 and 4 each with two long lamellæ, 4 very small, the claws simple.

The single species belonging to this genus is metallic blue above, and it has entirely the facies of a small Eumolpid. It differs from *Artematopus* and *Carcinognathus* * in having the fifth ventral segment very largely developed, the third and fourth tarsal joints only bilamellate (instead of joints 2–4), the apical joint of the maxillary palpi stouter, and the prosternal process margined between the coxæ only, the process not separated anteriorly from the rest of the prosternum. The single specimen obtained is in too fragile a condition to dissect the parts of the mouth.

1. **Ctesibius eumolpoides.** (Tab. XXVI. figg. 7 †; 7 *a*, prosternum; 7 *b*, abdomen.)

Oblong-oval, rather convex, very shining; metallic blue, the body beneath and the antennæ and legs black, the tips of the tarsi testaceous; above very sparsely clothed with long, fine, erect, fuscous hairs, the fifth ventral segment thickly, the rest of the under surface very sparsely, cinereo-pubescent. Head very sparsely, the epistoma more thickly, punctate, the front broadly transversely depressed in the middle above; antennæ about two-thirds the length of the body, with long projecting hairs. Prothorax strongly transverse, bisinuate at the base, and truncate at the apex, transversely compressed at the sides in front, rapidly and obliquely narrowing from the basal third forwards, and also narrowed behind, the hind angles acute; the surface sparsely, finely punctate, the punctures very distinct. Elytra three and one-half times the length of, and wider than, the prothorax, subparallel in their basal half and obliquely converging behind, compressed at the sides below the shoulders, the humeri appearing swollen; sparsely, rather coarsely punctate, the punctures arranged in regular series towards the sides and base. Beneath sparsely, rather coarsely punctate, the fifth ventral segment very densely, minutely punctate, the prosternum with the space between the middle and the flanks rugulose.

Length $3\frac{7}{8}$, breadth 2 millim.

*Hab.* Mexico (*Sallé*).

One example, its sex not ascertained.

* Kirsch appears to have overlooked the appendiculate form of the claws in this monotypic genus.

† In this figure the tarsi have been incorrectly drawn by our artist, the second joint not being lamellate.

## Subfam. *DASCILLINÆ.*

### Group **ANCHYTARSINI.**

### ANCHYTARSUS.

*Anchytarsus*, Guérin, Spec. et Icon. gén. des Anim. Art. livr. vi. no. 15, p. 1, tab. (1849); Horn, Trans. Am. Ent. Soc. viii. p. 86.

The single known species of this genus inhabits the Eastern States of North America. A second from Nicaragua is now added.

#### 1. **Anchytarsus substriatus.** (Tab. XXVI. fig. 8, ♀.)

♀. Oblong-oval, moderately convex, shining; piceous, the front of the head, the antennæ and legs, and the epipleuræ of the elytra obscure ferruginous, the palpi testaceous, the tips of the mandibles black; thickly clothed with fine brownish pubescence. Head densely, minutely punctate, with intermixed slightly coarser punctures, the eyes moderately large; antennæ about half the length of the body, rather slender, joint 2 very small, the others elongate and serrate. Prothorax convex in front, transverse, rapidly, arcuately narrowing from the base forwards, the hind angles sharp, the base bisinuate and very distinctly crenulate; the surface punctured like that of the head. Elytra nearly four times as long as the prothorax, gradually widening to a little beyond the middle; densely, minutely punctate, and obsoletely punctate-striate towards the sides and apex. Beneath densely, minutely punctate.

Length 10, breadth 4½ millim.

*Hab.* NICARAGUA, Chontales (*Belt*).

One example. This insect bears a very close superficial resemblance to *Tetraglossa palpalis*, and also to various Ptilodactylini, differing from the former in the securiform apical joint of the maxillary palpi, and from the latter in the simple tarsi. It is not very closely allied to the North-American *A. bicolor* (Melsh.).

### TETRAGLOSSA.

Head vertical, not prolonged in front, without frontal suture, sunk into the prothorax up to the eyes, the latter large and rounded; labrum broad, prominent; mandibles in great part exposed, short, curved, bifid at the tip, the latter hidden beneath the labrum; mentum broad, strongly transverse, narrowing in front, shorter in the male than in the female; ligula broad and prominent, deeply emarginate in the centre in front, and with a slender lobe on either side of the emargination and a similar lobe at the outer angle; apical joint of the maxillary palpi long and slender, elongate-triangular; apical joint of the labial palpi furnished with three very long, stout, flattened, densely reticulate and pubescent, submembranous lobes, and the third joint elongate, in the male, the apical joint stout and subsecuriform, and the third joint very short, in the female; outer lobe of the maxillæ divided into two tapering ciliate lobes, the external one slender and very elongate, the inner lobe stout; antennæ long, serrate, the second joint very small; prosternum horizontal and moderately long in front of the coxæ, extending rather narrowly between them behind, the process received into a deep notch in the mesosternum; anterior coxæ oval, a little more prominent than the prosternal process, with large trochantin; middle coxæ a little more distant than the anterior coxæ, with distinct trochantin; posterior coxæ considerably dilated inwards, separated by a narrow intercoxal process; prothorax obsoletely margined at the sides behind; tarsi rather slender, simple, the joints 1–4 decreasing in length, 1 about as long as 2 and 3 united, and much shorter than 5, the claws simple; tibial spurs small.

The above characters are taken from a single species, which is widely distributed in

Central America. This insect is closely allied to *Anchytarsus*, Guér., but differs from it in the extraordinary trilobate process of the labial palpi in the male, and the slender, elongate apical joint of the maxillary palpi in both sexes. The maxillæ also differ in form from those of *Anchytarsus*. The submembranous lobes of the labial palpi are almost black, and densely set with very short, minute hairs, the surface probably being highly sensitive. The labial palpi of the female are formed as in *Anchytarsus*.

1. **Tetraglossa palpalis.** (Tab. XXVI. figg. 9, ♂; 9 *a*, labium; 9 *b*, maxilla and maxillary palpus; 9 *c*, genitalia, ♂; 10, labium, ♀.)

Oblong-oval, moderately convex, shining; piceous or piceo-castaneous, the front of the head and the antennæ ferruginous or fusco-ferruginous, the femora more or less testaceous at the base, with the apex black or piceous, the tibiæ and tarsi ferruginous or fusco-ferruginous, the tibiæ sometimes piceous at the base; somewhat thickly clothed with fine brownish or yellowish-brown pubescence. Head densely, minutely punctate; antennæ in the male fully two-thirds, in the female about one-half, the length of the body, the joints from the third elongate and acutely serrate. Prothorax transverse, convex in front, compressed at the sides anteriorly, widest a little before the base, the sides rounded behind and rapidly, somewhat obliquely converging from the basal third forwards, the anterior angles prominent, the base crenulate; the surface thickly, minutely punctate, with intermixed slightly coarser punctures. Elytra moderately long, a little narrower at the base than the prothorax, widest at the middle; thickly, minutely punctate, and obsoletely punctate-striate towards the sides and apex. Beneath densely, minutely punctate.

Length $7\frac{3}{4}$–11, breadth $3\frac{1}{4}$–$4\frac{1}{4}$ millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*), Teapa in Tabasco (*H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui 4000 feet (*Champion*).

Three males and four females, varying greatly in size. This insect (like *Cladus maxillaris* in the Eucnemidæ) affords an example of a species closely resembling another superficially, but yet differing totally from it in important points of structure.

## Group **CNEOGLOSSINI.**

### CNEOGLOSSA.

*Cneoglossa*, Guérin, Spec. et Icon. gén. des Anim. Art. livr. ix. no. 36, p. 1, tab. (1849).

The two insects* here referred to this genus agree with Guérin's description and figures, except as regards the form of the antennæ, these organs in his single species, *C. collaris*, Guér., from Colombia, being filiform and feebly serrate, instead of dilated and strongly serrate, as in the Central-American forms. The latter also have the third joint slightly shorter (instead of longer) than the fourth. These differences, however, are specific, rather than generic. The head is completely hidden beneath the thorax, as in *Helodes*, from which the present genus differs in the simple tarsi; the semicircular thorax, with broadly flavous and almost transparent sides, gives these insects the form of many small Lampyridæ. The anterior coxæ are furnished with a small trochantin.

* I am unable to make out the form of the lobes of the maxillæ in *C. lampyroides*, the only species dissected.

The epistoma is prolonged beneath, and there is no visible labrum, the head being formed very much as in the species of the group Macropogonini of Horn.

### 1. **Cneoglossa lampyroides.** (Tab. XXVI. fig. 11.)

Elongate-oval, rather depressed, shining; brownish-black or fuscous, the prothorax dilute yellow or reddish-yellow, with a black median vitta, the sides semitransparent, the antennæ black, with the two basal joints usually reddish, the legs piceous or brownish, with the base of the femora, the knees, and tarsi sometimes paler; thickly pubescent, the hairs on the elytra brown or brownish-cinereous and rather coarse. Head very minutely punctured; antennæ—(♂) more than half the length of the body, broadly dilated and serrate from the third joint, the second joint very small, the third slightly shorter than the fourth—(♀) much shorter, with joints 4–11 moderately dilated. Prothorax strongly transverse, widest a little before the base, semicircular as viewed from above, truncate in front and with the base emarginate on either side, concave laterally, the hind angles rather sharp and projecting backwards; the surface thickly, very minutely punctate. Elytra about four times the length of the prothorax, and a little wider than it, subparallel, the humeri rounded; rather coarsely punctate-striate, the striæ shallow, the interstices somewhat convex and densely, rugulosely punctate.

Length $3\frac{1}{2}$–4, breadth $1\frac{3}{4}$–$1\frac{7}{8}$ millim. (♂ ♀.)

*Hab.* Mexico, Cuernavaca in Morelos (*Flohr*); Nicaragua, Chontales (*Janson*).

Six examples from Nicaragua and one from Mexico, representing apparently the sexes of one species, as they only differ in the form of the antennæ, the supposed male being from Mexico. A Nicaraguan specimen is figured.

### 2. **Cneoglossa brevis.**

Oblong-oval, feebly convex, shining; brownish-black, the elytra black towards the apex, the prothorax dilute yellow, with a black median vitta, the antennæ black, with the two basal joints testaceous, the epistoma and legs testaceous; the elytra clothed with brownish pubescence. Antennæ about half the length of the body, the joints from the third broadly dilated and acutely serrate. Prothorax as in *C. lampyroides*, but more sparsely and less distinctly punctate. Elytra about three and one-third times the length of the prothorax; punctate-striate, the striæ shallow, the interstices densely, rugulosely punctured.

Length 3, breadth $1\frac{1}{2}$ millim. (♂.)

*Hab.* Panama, Tolé (*Champion*).

One abraded example, with the apical three joints of the antennæ broken off. Less elongate and smaller than *C. lampyroides*, the antennæ much more acutely serrate from the third joint, the thorax smoother, the elytra shorter, &c.

## Subfam. *EUBRIINÆ*.

### DICRANOPSELAPHUS.

*Dicranopselaphus*, Guérin, Rev. et Mag. Zool. 1861, p. 531; Horn, Trans. Am. Ent. Soc. viii. p. 97 (1880).

Five species of this interesting genus have been described—four from Mexico and one from the United States; a fifth is now added from Guatemala. The bifid tarsal claw is peculiar to the males, the claws being simple at the tip in the females.

*Dicranopselaphus* is extremely closely allied to *Ectopria*, Lec., but differs from it in the dilated and lobed fourth tarsal joint, and the bi-appendiculate apical joint of the maxillary palpi. The thorax and elytra are, as in *Ectopria*, very peculiarly sculptured. The antennæ are pectinate in the males and serrate in the females. The general structure of the mouth-parts, antennæ, &c. is very beautifully illustrated by Guérin.

*a*. Antennæ (♂) pectinate from the fourth joint, the pectinations arising from the apex of each joint; elytra with pale linear markings. [FURCIPALPUS, Guér.] . *lesueuri*.

*b*. Antennæ (♂) pectinate from the third joint, the pectinations arising from before the apex of each joint. [DICRANOPSELAPHUS, Guér.]

*a'*. Antennæ black, with the two basal joints yellow; elytra almost unicolorous . *rufescens*.

*b'*. Antennæ black, with the two basal joints reddish-brown*; prothorax ferruginous, with a black patch on the middle of the disc in front, the basal impressions shallow; elytra with two broad angulated, transverse fasciæ, connected laterally, and the apical margin, broadly, testaceous . . . . . *pictus*.

*c'*. Antennæ black, with the apical two or three joints testaceous or flavo-testaceous; prothorax with deep basal impressions; elytra with two very narrow angulated, transverse fasciæ, connected laterally, the anterior one not reaching the suture, and some lines at the sides, testaceous, these markings only clothed with pallid pubescence . . . . . *venosus*.

*d'*. Antennæ testaceous, the basal four or five joints sometimes slightly infuscate; prothorax with deep basal impressions; elytra very much as in *D. venosus*, but with the pallid pubescence extending over a great part of the surface . . *flavicornis*.

### 1. **Dicranopselaphus lesueuri.**

*Dicranopselaphus lesueurii*, Guér. Rev. et Mag. Zool. 1861, p. 533, t. 17. fig. 1 (head from beneath, showing the antennæ and maxillary palpi) (♂)[1].

*Hab.* MEXICO (*Lesueur, in coll. Chevrolat*[1]).

Unique in Chevrolat's collection.

### 2. **Dicranopselaphus rufescens.**

*Dicranopselaphus rufescens*, Guér. Rev. et Mag. Zool. 1861, p. 534, t. 17. figg. 2, 2 *a–c* (♂)[1].

*Hab.* MEXICO, near Cordova (*Nieto, in coll. Guérin*[1]).

Unique in Guérin's collection.

### 3. **Dicranopselaphus pictus.** (Tab. XXVI. fig. 12, ♂.)

*Dicranopselaphus pictus*, Guér. Rev. et Mag. Zool. 1861, p. 535, t. 17. fig. 4 (♂)[1].

*Hab.* MEXICO, Tepanistlahuaca in Oaxaca (*Sallé*).

Unique in the Sallé collection. A figure of this insect is given for comparison with the allied species.

* The apical three joints are broken off in the type.

### 5. **Dicranopselaphus venosus.** (Tab. XXVI. figg. 13, ♂; 13 *a*, antenna.)

♂. Broadly oboval, moderately convex, opaque (slightly shining when denuded of pubescence); black or piceous, the elytra sometimes brown, the latter with a slender **V**-shaped mark on the middle of the disc towards the suture, connected laterally with a narrow sharply angulated post-median fascia, and some short irregular lines towards the sides, brownish or ferrugineo-testaceous, and in pale specimens also with some spots at the base and the apical margin broadly ferrugineo-testaceous; the antennæ black or brownish-black, with the apical two or three joints testaceous or flavo-testaceous, the legs piceous, with the tarsi testaceous, the femora sometimes paler than the tibiæ; the body beneath black or piceous, the prothorax and mesosternum sometimes ferrugineo-testaceous; the upper surface thickly clothed with very short pubescence, the pubescence on the lighter elytral markings yellowish or yellowish-cinereous, that on the other parts blackish or fuscous. Head densely, rugulosely punctate, the eyes large and rather narrowly separated; antennæ long, tapering at the tip, strongly pectinate from the third joint, the pectinations arising from before the apex of each joint. Prothorax very short, two and one-half times as broad as long, truncate at the apex (as viewed from above), rapidly arcuately narrowing from the base forwards, the hind angles sharp; the surface crowded with short, sinuous, irregular, anastomosing lines of very fine punctures, the small interspaces shining and almost smooth, the disc convex in the centre and obliquely depressed on either side of the middle at the base. Elytra feebly rounded at the sides, slightly compressed below the humeri, obtuse behind; the surface crowded with short anastomosing lines of fine punctures, the lighter-coloured lines somewhat raised and smoother, the interspaces densely, excessively minutely punctate.

♀. Antennæ much shorter, acutely serrate from the fourth joint, the third joint long and triangular; the eyes smaller and widely separated; the tarsal claws undivided at the tip.

Length 3–3$\frac{4}{5}$, breadth 2$\frac{1}{10}$–3 millim.

*Hab.* Guatemala, Zapote (*Champion*).

Nine males and one female. Closely allied to *D. flavicornis* and *D. pictus*, Guér., differing from the first-mentioned in having the antennæ black, except at the tip, and the pallid pubescence on the elytra confined to the lighter-coloured markings, and from *D. pictus* in the form of the elytral markings. The Zapote specimens vary in colour, but the slightly raised reticulate markings on the elytra are perfectly constant, and indicated by lines of pallid pubescence.

### 6. **Dicranopselaphus flavicornis.** (Tab. XXVI. fig. 14, ♂.)

*Dicranopselaphus flavicornis*, Guér. Rev. et Mag. Zool. 1861, p. 534, t. 17. figg. 3, 3 *a–f* (♂ ♀)[1].

*Hab.* Mexico, Toxpam, near Cordova (*Sallé*[1]), Orizaba (*Flohr*), ? Oaxaca (*Höge*).

Described from five specimens found by Sallé at Toxpam, four of which are contained in his collection. The eight examples received from Höge are labelled Oaxaca, but it is probable that they are really from Cordova or Jalapa. The antennæ sometimes have the basal joints slightly infuscate. A male is figured.

## ECTOPRIA.

*Ectopria*, Leconte, Proc. Acad. Phil. vi. p. 351 (1853); Horn, Trans. Am. Ent. Soc. viii. p. 95.
*Eurea*, Leconte, loc. cit. p. 352.

The single known representative of this genus is somewhat widely distributed in the United States of North America, and it appears to be extremely variable. The Panama

insects referred to it agree accurately with Dr. Horn's definition of *Ectopria*. The tarsal claws are cleft at the tip in the males and simple in the females; the tarsi themselves are slender, the fourth joint not being dilated and distinctly produced beneath the fifth joint, as in *Dicranopselaphus*; and the apical joint of the maxillary palpi is not appendiculate.

1. **Ectopria reticulata.** (Tab. XXVI. figg. 15, ♂; 15 *a*, antenna, ♂; 16, antenna, ♀.)

♂. Broadly oboval, moderately convex, opaque; brown, the prothorax reddish-brown, with some spots at the base and sides piceous; the elytra with one or two streaks at the base, a V-shaped mark on the inner part of the disc before the middle, extending along the suture to the base, two oblique, angulate, partly coalescent, post-median fasciæ (enclosing two spots of the ground-colour on each elytron), the anterior one extending down the suture to the apex, and both joined laterally and with the V-shaped mark to two oblique streaks, and the apical margin more or less, ferrugineo-testaceous; the antennæ with joints 1–5 brownish or pitchy-brown, the other joints testaceous or flavo-testaceous; the legs brownish or obscure testaceous, the tarsi flavous; the body beneath obscure ferruginous or brown; the upper surface densely clothed with very short pubescence, the pubescence on the light-coloured portions of the prothorax and on the network of pale lines on the elytra yellowish-cinereous, that on the other parts partaking of the ground-colour. Head densely punctured, the eyes very large and rather narrowly separated; antennæ moderately long, tapering at the tip, pectinate from the third joint, joint 3 much longer than 4. Prothorax very short, two and one-half times as broad as long, rapidly and arcuately narrowing from the base forwards, slightly emarginate in front (as viewed from above) and bisinuate at the base, the hind angles rather obtuse; the surface crowded with short, irregular, anastomosing lines of fine punctures (appearing densely punctate), with smoother spaces here and there, and deeply obliquely depressed on either side of the middle at the base. Elytra subparallel towards the base, rounded behind, widest a little beyond the middle, compressed at the sides below the humeri; the dark parts of the surface crowded with short, irregular, anastomosing lines of fine punctures, the interspaces between which are shagreened, the pale markings sparsely punctured (appearing slightly raised).

♀. Antennæ shorter, serrate from the third joint, the third joint much longer than the fourth; the eyes smaller and more widely separated; the tarsal claws undivided at the tip.

Length $3\frac{1}{3}$–$3\frac{3}{4}$, breadth $2\frac{1}{4}$–$2\frac{1}{2}$ millim.

*Hab.* Panama, Volcan de Chiriqui (*Champion*).

Two males and one female, the latter having the pale reticulation on the elytra formed of very narrow lines. The elytral sculpture is much finer than in *E. vermiculata*. The slender tarsi, the simple apical joint of the maxillary palpi, the shorter and more feebly pectinate antennæ, the dull and more densely punctured surface, the different elytral markings, &c., separate *E. reticulata* from *Dicranopselaphus flavicornis*.

2. **Ectopria vermiculata.** (Tab. XXVI. figg. 17, ♀; 17 *a*, antenna.)

♀. Broadly oboval, moderately convex, rather shining; ferruginous, the elytra with three oblong marks immediately below the base—one at the shoulder, one close to the suture, and one on the disc,—and a common angulate transverse fascia a little beyond the middle, the latter extending forwards along the suture almost to the innermost basal mark, brownish-black, and the apical margin broadly yellowish; the eyes and antennæ black, the latter with the two basal joints reddish-testaceous and the apical joint brown; the legs and palpi testaceous; the upper surface thickly clothed with very short fine sericeous pubescence, the pubescence golden on the light-coloured portions and fuscous elsewhere. Head densely, very minutely punctate, the eyes rather small and widely separated; antennæ moderately long, stout, tapering

at the tip, acutely serrate from the fifth joint, joint 3 elongate, longer than 4, 5 shorter than 4, 5–10 about equal in length. Prothorax very short, more than twice as broad as long, rapidly and arcuately narrowing from the base forwards, emarginate in front and feebly bisinuate at the base, the lateral margins reflexed, the hind angles sharp; the surface with short, sinuous, irregular, depressed, anastomosing lines of very fine punctures, the interspaces between which are densely, excessively minutely punctate, the disc depressed on either side of the middle at the base. Elytra feebly rounded at the sides, somewhat obliquely narrowing behind, and rather abruptly declivous from about the middle; sculptured like the prothorax, but with the short sinuous anastomosing lines of punctures deeply impressed and very conspicuous, and the very minute dense punctuation of the interspaces more distinct.

Length $3\frac{2}{3}$, breadth $2\frac{1}{2}$ millim.

*Hab.* Panama, Bugaba (*Champion*).

One example. In this insect the short, sinuous, anastomosing lines of punctures on the elytra are much more deeply impressed than in any of the species of *Dicranopselaphus*.

Subfam. *EUCINETINÆ.*

## EUCINETUS.

*Eucinetus,* Germar, Mag. Ent. iii. p. 255 (1818); Guérin, Spec. et Icon. gén. des Anim. Art. livr. i. no. 4, p. 1; Tournier, Dascillides du Bassin Léman, p. 87; Horn, Trans. Am. Ent. Soc. viii. p. 91.

A holarctic genus containing sixteen described species*. The single representative from Guatemala is closely allied to various North-American forms. These insects show a remarkable resemblance to the genus *Orchesia* and other Melandryidæ, and also to the Mordellidæ, in the form of the middle and hind legs. Reitter places *Eucinetus* in the Clavicorn-series, near *Clambus*.

### 1. **Eucinetus strigipennis.** (Tab. XXVI. fig. 18†.)

Navicular, convex, shining; black or blackish-brown, the head and prothorax obscure castaneous; the antennæ with the basal three joints testaceous, the apical one or two joints yellow, and the others black or slightly infuscate; the palpi testaceous; the legs obscure ferruginous, with the tip of each of the joints 1–4 of the four hinder tarsi, as well as the extreme apex of the hind tibiæ, black, and the anterior tarsi, and the apical joint of each of the other tarsi, testaceous; thickly clothed with very fine, sericeous, brownish pubescence. Head densely, very minutely punctate; antennæ moderately long, very slender, a little thickened at the tip, joints 1 and 2 stouter than the others, 2 slightly longer than 1, 3 and 4 each nearly as long as 2, 5–10 decreasing in length, 10 not much longer than broad, 11 oval. Prothorax more shining than the elytra, sparsely and less distinctly punctured than the head, the punctuation excessively minute. Elytra closely, transversely strigose, with a series of fine shallow longitudinal grooves, the interspaces between which appear to be slightly convex, and a well-marked sutural stria, extending from the apex to before the middle. Posterior tibiæ with a single long spur.

Length 3–$3\frac{1}{2}$, breadth $1\frac{3}{5}$–$1\frac{7}{8}$ millim.

*Hab.* Guatemala, Cerro Zunil and San Gerónimo (*Champion*).

One specimen from each locality, probably females. The example from Cerro Zunil differs from the other in being less elongate; it also has the intermediate joints of the

* *E. subaxillaris* and *E. substriatus*, Fairm., from Madagascar, belong to *Eustrophus* (Melandryidæ), *cf.* Fairm., Ann. Soc. Ent. Fr. 1886, p. 39.

† The antennæ are much more slender than represented by our artist.

antennæ only slightly infuscate, and the elytra black and more shining. There is no trace of striæ in the shallow longitudinal grooves on the elytra; the sutural stria, however, is sharply defined. This species is allied to *E. terminalis*, Lec., and *E. strigosus*, Lec. (nec Reitter), but may be separated from them by the sculpture or colour of the elytra; from *E. morio*, Lec., the single tibial spur will serve to distinguish it.

## Subfam. *HELODINÆ*.

### HELODES.

*Elodes*, Latreille, Préc. car. gén. Ins. p. 44 (1796); Guérin, Spec. et Icon. gén. des Anim. Art. livr. iii. no. 9, p. 1 (part.).

*Helodes*, Jacquelin Duval, Gen. Col. Europ. iii. p. 150; Tournier, Dascillides du Bassin Léman, p. 28; Horn, Trans. Am. Ent. Soc. viii. p. 103.

*Sacodes*, Leconte, Proc. Acad. Phil. vi. p. 356 (1853).

Of this genus, which has a somewhat similar distribution to *Cyphon*, a single representative only has been detected within our limits; it is closely allied to European and North-American forms.

#### 1. **Helodes mexicana.** (Tab. XXVI. figg. 19, ♀; 19 *a*, antenna.)

♀. Oboval, moderately convex, shining, finely pubescent; nigro-piceous, the prothorax yellow, with a broad black patch on the disc, extending from the base to near the apex and abruptly narrowed in front, the antennæ black, the legs piceous, with the femora paler. Head invisible from above, thickly punctured; antennæ filiform, stout, very elongate, about two-thirds the length of the body, joint 3 minute, 4 very elongate, longer than 5, 5–11 subequal in length. Prothorax transverse, truncate in front, semicircular as viewed from above, the apical margin feebly and the lateral margins strongly reflexed; the surface thickly, very finely punctate, the punctuation becoming sparser at the sides, the flavous lateral portions semitransparent. Elytra three and one-half times the length of the prothorax, widening from the base to about the middle; closely, moderately finely, rugulosely punctate, the punctuation much coarser than that of the prothorax, and with indication of shallow longitudinal grooves on the disc.

Length $4\frac{1}{2}$, breadth $2\frac{1}{2}$ millim.

*Hab.* Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

One example. This insect resembles the European *H. marginata* (Fabr.), but it has much longer and stouter antennæ, a less transverse thorax, darker legs, &c. Amongst the North-American species, it is perhaps nearest allied to *H. maculicollis*, Horn.

### PRIONOCYPHON.

*Prionocyphon*, Redtenbacher, Fauna Austriaca, ed. 2, p. 517 (1858); Jacquelin Duval, Gen. Col. Europ. iii. p. 151; Tournier, Dascillides du Bassin Léman, p. 45; Horn, Trans. Am. Ent. Soc. viii. p. 99.

Seven species of this genus are known—one from Europe, two from North America, and four from Japan. Two others are now added from Central America, both interesting new forms. They are usually very scarce insects; *P. pilicornis*, however, has been found in numbers, on the decaying branches of fallen trees in forest-clearings.

1. **Prionocyphon pilicornis.** (Tab. XXVI. figg. 20, ♂; 20 *a*, antenna, ♂; 21, antenna, ♀.)

♂. Rotundate or rotundate-oval, very convex, shining; black or pitchy-black, usually with a violaceous or brassy lustre, the body beneath, the front of the head, the oral organs, antennæ, and legs testaceous; the upper surface thickly clothed with rather long cinereous pubescence, the elytra with a very broad common transverse patch of fuscous or brownish pubescence on the disc a little before the middle (usually rubbed off). Head, prothorax, and scutellum sparsely, very minutely punctate; head very broad, the eyes large and prominent; antennæ elongate, in small specimens fully as long as the body, joint 1 greatly dilated on the inner side, ear-shaped, 2 small, globose, 3 very minute, 4–11 elongate, flattened, a little dilated, and parallel towards their apex, 4 longer than 5, 5–11 subequal in length, all the joints clothed with long projecting hairs; prothorax very short and convex; elytra abruptly declivous from about the middle, appearing transversely gibbous towards the base when viewed from the side, thickly, finely punctate, the punctuation much coarser than that of the prothorax; prosternal process very narrow, laminiform.

*Var.* The sides of the head, two marks at the base of the prothorax, and a very large common patch on the disc of the elytra, extending to the base, testaceous.

♀. Short-oval, the patch of darker hairs on the elytra more extended, in one specimen occupying nearly the whole of the upper surface; antennæ much shorter and very feebly serrate, finely pubescent, joint 1 much smaller and very much less dilated within, 3 not much shorter than 2; eyes not prominent.

Length $2\frac{1}{3}$–4, breadth 2–3 millim.

*Hab.* GUATEMALA, San Gerónimo, El Tumbador, Cerro Zunil (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Thirty-five males and six females, most of those from Chiriqui being in a bad state of preservation. The variety is represented by three examples from Chiriqui. The insects described as the females differ greatly from the males in the form of the antennæ, as well as in their non-prominent eyes; but, as they were obtained at Cerro Zunil and on the Volcan de Chiriqui with the males, there can be little doubt that they really belong here. In some of the males the third antennal joint is so minute as to be scarcely visible, the corresponding joint in the females being much larger, and not very much shorter than the second. The long hairs on the antennæ of the males are conspicuous. The insect varies greatly in size.

2. **Prionocyphon auritus.** (Tab. XXVI. figg. 22, ♂; 22 *a*, antenna.)

Rotundate-oval, very convex, shining; black, with a brightly brassy lustre, the front of the head, oral organs, antennæ, and legs ferruginous, the elytra with a red apical patch; the upper surface thickly clothed with rather long cinereous and brownish pubescence. Head, prothorax, and scutellum sparsely, very minutely punctate; head very broad, the eyes not prominent; antennæ short, not half the length of the body, finely pubescent, joint 1 enormously dilated on the inner side, ear-shaped, 2 oval, 3 very small, much shorter than 2, 4–11 moderately long, flattened, a little dilated, and subparallel towards their apex, very gradually decreasing in length; prothorax very short and convex; elytra declivous from about the middle, thickly, minutely punctate, the punctuation coarser than that of the prothorax.

Length $3\frac{1}{5}$, breadth $2\frac{1}{2}$ millim. (♂.)

*Hab.* PANAMA, Peña Blanca 3000 feet (*Champion*).

One specimen, evidently a male. The antennæ in this insect are even shorter than they are in the female of *P. pilicornis*, and have the basal joint enormously dilated.

The elytral punctuation is finer than in that species. The apical red patch is very sharply defined. The elytra appear to be clothed with intermixed cinereous and brownish hairs.

## PRIONOSCIRTES.

Head very broad, deflexed; maxillary palpi with the apical joint oval, pointed at the tip; labial palpi with the apical joint oval, arising from near the base of the second joint, and at a right angle to it; antennæ serrate, joint 1 stout, oval, dilated on the inner side, 2 and 3 very short, 2 moderately stout, globose, 3 narrower and subtriangular, 4–11 rather elongate, flattened, and somewhat dilated, subparallel towards their apex, gradually decreasing in length; hind coxæ contiguous along the median line, the dilated inner portion of the coxal plates transverse oval; legs as in *Scirtes*.

The extraordinary little insect from Guatemala from which the above characters are taken may be described as a *Prionocyphon* with the saltatorial hind legs of a *Scirtes*, and the hind coxæ of a *Helodes* or *Cyphon*. The antennæ are formed as in *Prionocyphon*, except that the basal joint is less dilated. The hind tibiæ are shorter than in most of the species of *Scirtes* of the same size. The species has quite the facies of the European *Prionocyphon serricornis*, but it is very much smaller.

1. **Prionoscirtes saltitans.** (Tab. XXVI. figg. 23; 23 *a*, antenna; 23 *b*, hind leg.)

Rotundate-elliptic, very convex, shining; rufo-testaceous, the eyes black, the antennæ and legs testaceous; clothed with fine yellowish pubescence. Head and prothorax sparsely, exceedingly minutely punctate; eyes moderately large and not prominent; antennæ about three-fourths the length of the body; prothorax very short and convex, the margins not visible from above; elytra thickly, minutely punctate, the punctuation much more distinct than that of the prothorax; hind tibiæ slightly bowed inwards and rather short, about equalling the femora in length, the upper spur about two-thirds the length of the first tarsal joint, the lower spur small.

Length $2\frac{1}{2}$, breadth $1\frac{2}{3}$ millim.

*Hab.* GUATEMALA, Mirandilla (*Champion*).

One specimen, probably a male, from the lower slope of the Volcan de Fuego.

## ORA.

*Ora*, Clark, Journ. Ent. ii. p. 385 (1865) (sub Halticidæ).

This name * is retained for various species which differ from *Scirtes* as follows:—Posterior coxæ contiguous in front only along the median line, separated posteriorly by the raised intercoxal process of the abdomen, less abruptly dilated inwards, the inner portion not forming a subquadrate plate as in *Scirtes*; middle coxæ contiguous behind, or separated by a very thin lamina; prothorax and elytra explanate and acutely margined at the sides. The head is margined at the sides below the eyes, as in many *Scirtes*. Clark, who described the tibiæ as unarmed and did not observe the form of the coxæ, referred this genus without hesitation to the Halticidæ, but its true

* Omitted from the Munich Catalogue.

affinities were noticed by Chapuis *. In addition to *O. grayi*, Clark, from Brazil, and *O. chevrolati*, Clark (=*troberti*, Guér., nec Horn), from Mexico and Guatemala, and the various species here described, the genus includes *Scyrtes complanatus*, Guér., from Brazil, and probably the Cuban *Scirtes sexlineatus* and *S. interruptus*, Chevr., the eastern *S. pictus* (Fabr.), and others. In several of the Central-American species the elytra have intermixed coarser punctures, these bearing longer hairs than the fine punctures. The male of *O. discoidea*, and probably that of the other species also, has the fifth ventral segment emarginate at the apex. These insects, like many *Scirtes*, appear to live upon various species of *Salix*.

Form oblong, rather depressed; elytra strongly explanate at the sides, uniformly punctured, with interrupted, partly confluent, light and dark stripes; body apparently glabrous above: length 6 millim. . . . . *troberti*.

Form broad-oval, depressed; elytra more or less explanate at the sides, with intermixed coarser punctures and (except in pale varieties) distinct markings; body pubescent, the elytra with intermixed slightly longer hairs.

Elytra pale testaceous, with a rather narrow oblique black or piceous stripe on the disc, strongly explanate at the sides, the surface densely, minutely punctate, with distinct intermixed coarser punctures: length 4–4¾ millim. . . . . *obliqua*.

Elytra pale testaceous, with a very broad black or piceous stripe on the disc, moderately explanate at the sides, the surface more strongly punctate, with indistinct intermixed coarser punctures: length 4¼–5 millim. . . . . *discoidea*.

Elytra pale testaceous, with numerous irregular partly coalescent spots, moderately explanate at the sides, the punctuation as in *O. obliqua*: length 4–4½ millim. . *marmorata*.

Elytra pitchy-black, with irregular flavous spots along the sides, base, and suture: length 3 millim. . . . . *mixta*.

Form oval, rather convex; elytra moderately explanate at the sides, immaculate, the punctuation uniform: length 4 millim. . . . . *nigricornis*.

### 1. **Ora troberti.** (Tab. XXVI. figg. 24; 24 *a*, hind coxæ.)

*Scyrtes trobertii*, Guér. Rev. et Mag. Zool. 1861, p. 545 (nec Horn)[1].
*Ora chevrolatii*, Clark, Journ. Ent. ii. p. 385 (1865)[2].

*Hab.* Mexico[1 2]; Guatemala, Panzos (*Champion*).

Our two examples from Panzos agree very nearly with Clark's type in the British Museum, and also with Guérin's description, except that they have the longitudinal streaks on the elytra more interrupted. In the Panzos specimens the elytra are brownish-black (instead of brown or reddish-brown), with the suture, base, and sides, three or four partly coalescent elongate streaks below the base (the second extending forwards), an angulated postmedian fascia, and a similar ante-apical fascia (both appearing as if formed by short coalescent streaks), yellow. They have the antennæ black, with

* Gen. Col. xi. p. 144, nota.

the three basal joints testaceous. The upper surface is shining, glabrous, and finely, moderately closely punctate. The thorax is explanate and acutely margined at the sides, widest at the base, the sides being a little rounded. The elytra are rather elongate, acutely margined and explanate at the sides, and compressed laterally below the shoulders. The antennal joints 4–10 become gradually shorter outwards. The femora are smooth and glabrous. The general shape is oboval. The Texan insect described and figured by Dr. Horn under the name *Scirtes troberti* (Trans. Am. Ent. Soc. viii. p. 102, t. 1. fig. 15) belongs to a very different species*. *O. troberti* (Guér.), like most of its congeners, lives upon willows; it resembles a species of *Œdionychis*, of the family Halticidæ.

### 2. **Ora obliqua.** (Tab. XXVI. fig. 25.)

Broad-oval, depressed, rather shining; head, prothorax, and scutellum black or piceous, the base of the head and two marks on the disc of the prothorax, as well as the lateral margins, sometimes rufous or rufo-testaceous; the elytra pale testaceous, each with a long oblique black or piceous streak on the disc extending to a little beyond the middle; the antennæ black or piceous, with the three basal joints testaceous; the body beneath in great part piceous or brown; the legs piceous or brown, with the tarsi, the apex of the tibiæ, and the basal half of the femora testaceous; the upper surface thickly clothed with very fine, pallid, sericeous pubescence, the elytra also with intermixed longer hairs. Head very minutely punctate; antennæ moderately long, joints 2 and 3 subequal in length, 4–11 elongate; prothorax short, rapidly narrowing from the base, explanate and acutely margined at the sides, densely, very minutely punctulate; scutellum punctured like the prothorax; elytra broadly explanate and acutely margined at the sides, densely, minutely punctate, with distinct intermixed, slightly coarser punctures, and indications of an impressed line near the suture. Posterior tibiæ elongate, slightly curved, and dilated externally from a little below the base to the apex, appearing rounded on their outer edge, the upper spur very long.

*Var.* Above and beneath and the legs pale testaceous, the hind femora a little darker at the tip, the antennæ coloured as in the type.

Length 4–4¾, breadth 2¾–3⅓ millim.

*Hab.* Mexico, Vera Cruz (*Sallé*); Guatemala, Panzos (*Champion*).

Found in numbers by myself upon a species of *Salix*, on the banks of the River Polochic, on the Atlantic slope, the typical and pallid forms occurring together. The variety only is represented in the Sallé collection. This is one of several Central-American forms allied to the Brazilian *O. complanata* (Guér.), the description of which is too vague for the identification of closely allied species. The pallid variety agrees with it in colour. A typical example from Panzos is figured.

### 3. **Ora discoidea.** (Tab. XXVI. fig. 26.)

Broad-oval, depressed, rather shining; head, prothorax, and scutellum black or piceous, the base of the head and the margins of the prothorax, as well as the apex of the latter in the centre, often obscure testaceous; the elytra pale testaceous, each with a very broad piceous or brownish vitta on the disc extending from a little below the base to near the apex (leaving a narrow sutural, and a broad marginal and basal stripe of the ground-colour); the antennæ black or piceous, with the three basal joints testaceous; the body beneath and the legs piceous or brown, the basal half of the femora and the tarsi testaceous; the upper

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* The name *texanus* is here proposed for the Texan insect.

surface thickly clothed with very fine, pallid, sericeous pubescence, the elytra also with scattered intermixed longer hairs. Head very minutely punctate; antennæ as in *O. obliqua*; prothorax short, rapidly narrowing from the base, explanate and acutely margined at the sides, minutely punctulate; scutellum punctured like the prothorax; elytra explanate and acutely margined at the sides, densely, very finely punctate, with intermixed slightly coarser punctures, and indications of an impressed line near the suture.

♂. Fifth ventral segment arcuate-emarginate at the apex.

Var. *α*. The discoidal vitta of the elytra obliterated or reduced to a narrow streak, the elytra sometimes with irregularly scattered brownish spots.

Var. *β*. Above and beneath, the legs, and antennæ testaceous, the head, prothorax, scutellum, and posterior knees brown or reddish-brown; the elytra as in *α*.

Length $4\frac{1}{4}$–5, breadth $2\frac{2}{3}$–$3\frac{1}{4}$ millim.

*Hab.* MEXICO, Cordova, Vera Cruz (*Sallé*), Jalapa (*Höge*); GUATEMALA, near the city (*Salvin*), Dueñas (*Champion*); HONDURAS (*Mus. Brit.*).

Found in abundance in all its varieties upon a species of *Salix* at Dueñas; also not uncommonly at Jalapa. In many of the pallid examples the elytra are spotted with brown, this being due to the irregular distribution of the darker pigment. *O. discoidea* is closely allied to *O. obliqua*, but differs from it in having the elytra a little less explanate at the sides (the general shape being rather more elliptic), and not so minutely punctured, with the intermixed coarser punctures not very distinct. In *O. obliqua* the elytral punctuation is very minute, and the intermixed coarser punctures quite distinct. A specimen from Dueñas is figured.

### 4. **Ora marmorata.**

Broad-oval, depressed, shining; pale testaceous, the prothorax with indistinct brownish markings, the elytra with numerous irregular brown spots which are here and there coalescent, the posterior femora suffused with reddish-brown at the apex; the upper surface thickly clothed with fine pallid pubescence, the elytra also with intermixed longer hairs. Head, prothorax, and scutellum closely, very minutely punctate; antennæ moderately long and slender, joints 2 and 3 short, equal in length, 4–11 elongate; prothorax short, rapidly narrowing from the base, explanate and acutely margined at the sides; elytra acutely margined and slightly explanate at the sides, closely, very minutely punctate, with intermixed slightly coarser punctures, and indications of an impressed line near the suture.

*Var.* The elytral markings obliterated.

Length 4–$4\frac{1}{2}$, breadth $2\frac{1}{2}$–3 millim.

*Hab.* PANAMA, Volcan de Chiriqui, David (*Champion*).

Two examples, both somewhat immature. Very near *O. obliqua*, but differing from it in the less explanate margins of the elytra, as well as in colour. The punctuation of the elytra is equally minute. From *O. discoidea* it may be separated by the distinctly more finely punctured elytra. The elytral markings in the typical form somewhat resemble those of certain varieties of *O. discoidea*, but the spots are much more numerous and partly coalescent.

### 5. **Ora mixta.** (Tab. XXVI. fig. 27.)

Broad-oval, short, depressed, rather shining; black or pitchy-black, the sides of the head in front and the anterior and lateral margins of the prothorax obscure testaceous; the elytra with an oblong humeral

patch (angulated within) and some irregular markings at the sides beyond the middle, at the base, and along the suture flavous; the antennæ piceous, with the three basal joints testaceous; the legs piceous, the tibiæ, the tarsi, and the base of the femora testaceous; the upper surface clothed with very fine, pallid, sericeous pubescence, the elytra also with scattered intermixed longer hairs, apparently arising from small bare spots. Head, prothorax, and scutellum densely, very minutely punctate; antennæ moderately long, joints 2 and 3 short, subequal, 4–11 gradually decreasing in length; prothorax short, rapidly narrowing from the base, slightly dilated at the sides; elytra broadly explanate and acutely margined at the sides, densely, minutely punctate, with distinct, scattered, intermixed coarser punctures, and indications of a fine impressed line near the suture.

Length 3, breadth 2 millim.

*Hab.* GUATEMALA, Torola and Paso Antonio (*Champion*).

Two examples, both from the low country bordering the Pacific Ocean. This peculiar species approaches *O. obliqua*, but it is very much smaller, and the general shape is more rounded. The elytra have asymmetrical markings; the longer hairs, which are easily abraded, appear to arise from very small bare spots; the intermixed coarser punctures are quite distinct. The thorax is less explanate at the sides than in *O. obliqua* and its allies.

### 6. **Ora nigricornis.**

Oval, rather depressed, shining; fulvo-testaceous, the antennæ black, with the three basal joints testaceous; legs testaceous, the tarsi infuscate, the posterior femora reddish; the upper surface finely pubescent. Head, prothorax, and scutellum thickly, very finely punctate; antennæ moderately long, slender, joint 3 small, about as long as 2, 4–11 elongate, the outer joints slightly decreasing in length; prothorax slightly explanate and acutely margined at the sides, very short, rapidly narrowing from the base; elytra flattened on the disc, slightly explanate and acutely margined at the sides, thickly, finely, uniformly punctate, the punctuation coarser than that of the prothorax, and with indications of a fine impressed line near the suture.

Length 4, breadth $2\frac{1}{2}$ millim.

*Hab.* PANAMA, Bugaba (*Champion*).

This species agrees with *O. discoidea* and its allies in the form of the hind coxæ and also in the explanate margins of the elytra; but differs from them in the more coarsely punctured elytra, without trace of intermixed coarser impressions. It is smaller, narrower, and less depressed than *O. discoidea*. One example, probably quite mature.

## SCIRTES.

*Scirtes*, Illiger, Mag. vi. p. 301 (1807); Guérin, Spec. et Icon. gén. des Anim. Art. livr. i. no. 3, p. 1 (1843); Tournier, Dascillides du Bassin Léman, p. 83; Horn, Trans. Am. Ent. Soc. viii. p. 101.

The numerous species here referred to *Scirtes* agree in the following characters:—Posterior coxæ quite contiguous along the median line, extending over the intercoxal process of the abdomen, very abruptly dilated inwards, the inner portion forming a subquadrate plate; middle coxæ separated by a narrow lamina; prothorax and elytra (except in *S. oblongus*) narrowly margined. They have the long upper spur of the

posterior tibiæ shorter than in the typical species of the genus, the European *S. hemisphærica* (Linn.), in which it is about as long as the first tarsal joint. So far as I have been able to observe, the Central-American species also differ from *S. hemisphærica*, as well as from the North-American *S. tibialis*, Guér., and *S. troberti*, Horn (nec Guér.), in having the sides of the head margined below the eyes. Hitherto, the whole of the saltatorial Dascillids from all parts of the world have, with two exceptions, been referred to the one genus, *Scirtes*, but it is certain that some of them belong to distinct genera; several, as already noticed, are here separated under the name *Ora*, Clark.

Sixty-nine species of *Scirtes* have been described, and many more are now added. *S. suborbiculatus*, *S. pilatei*, and others are extremely variable in colour. I am unable to detect any external sexual characters.

These insects are found in marshy places, on long grass or on various species of *Salix*, and owing to their extreme agility are very difficult to capture.

*a*. Prothorax arcuately dilated at the sides, narrowed behind; elytra striped (except in the pale variety); form oblong: length 6 millim. . . . . *oblongus*.

*b*. Prothorax not dilated at the sides, shorter, and forming almost a continuous outline with the elytra.

*a′*. Elytra deeply emarginate in front; legs very stout, the hind tibiæ bowed inwards; form transversely orbicular, very convex; body black above, the elytra bluish-violaceous, clothed with cinereous hairs . . . . . *cæruleus*.

*b′*. Elytra not deeply emarginate in front; legs more slender, the hind tibiæ straighter; form less convex.

*a″*. Form rotundate or rotundate-oval, moderately convex; pubescence fine and sparse: length 3–4 millim.

*a‴*. Elytra rather coarsely punctate; body rufo-testaceous, the elytra in the typical form with more than the apical half black . . . . . *rotundatus*.

*b‴*. Elytra finely and more sparsely punctate; body brownish, the prothorax reddish-yellow, paler at the sides, the elytra usually with the sutural, basal, and lateral margins infuscate . . . . . *circumcinctus*.

*c‴*. Elytra finely, moderately closely punctate; body black or piceous, the prothorax with the sides broadly flavous or entirely reddish-yellow . *thoracicus*.

*b″*. Form broadly oval or broadly elliptic, moderately convex.

*d‴*. Antennæ stout and moderately long, black, the third joint shorter than the second; body black, the prothorax and a shoulder-spot on each elytron rufo-testaceous: length 4 millim. . . . . *scapularis*.

*e‴*. Antennæ slender, long or moderately long.

$a^4$. Third antennal joint as long as or not much shorter than the second.

$a^5$. Pubescence rather long and coarse; prothorax narrowing from the base; elytra moderately closely and not very finely punctate; body varying in colour from piceous to rufo-testaceous: length 3–4½ millim. . . . . *pilatei*.

$b^5$. Pubescence shorter and finer; elytral punctuation finer.
$a^6$. Elytral punctuation moderately close and fine.
$a^7$. Prothorax somewhat rounded at the sides; body obscure testaceous, the prothorax yellowish, the elytra with the base narrowly infuscate: length 4 millim. . . . . *ellipticus.*
$b^7$. Prothorax narrowing from the base; body brown, the head and prothorax paler: length $2\frac{1}{4}$–3 millim. . . . . *pulicarius.*
$b^6$. Elytral punctuation dense and minute; body brown, the head and prothorax paler: length $3\frac{1}{4}$ millim. . . . . *tenuicornis.*
$b^4$. Third antennal joint exceedingly short, very much shorter than the second; body black, sparsely and very finely pubescent; antennæ pale: length 3 millim. . . . . *ater.*
$f'''$. Antennæ rather stout, about as long as the body, the third joint minute; body nigro-piceous, finely pubescent; eyes prominent: length $2\frac{1}{4}$–3 millim. . . . . *longicornis.*
$g'''$. Antennæ rather stout, elongate, piceous, the three basal joints pale, the third very small; body black, the prothorax reddish-yellow, the elytra sometimes with a common yellowish median spot: length $2\frac{1}{2}$–$2\frac{4}{5}$ millim. . . . . *collaris.*
$h'''$. Antennæ rather stout, moderately long, testaceous (the tip sometimes infuscate), the third joint longer; body varying in colour from black to testaceous, the elytra with an oblong common yellowish median spot (rarely obliterated), the prothorax sometimes entirely reddish-yellow: length $2\frac{1}{2}$–3 millim. . . . . *suborbiculatus.*
$c''$. Form regularly oval, convex.
$i'''$. Prothorax acutely margined at the sides; antennæ slender; body black: length about 3 millim. . . . . *saltator.*
$j'''$. Prothorax very feebly margined at the sides; antennæ stouter; body brownish, the head and prothorax partly reddish-yellow, the elytra with the base and apex and a lateral patch black: length $2\frac{2}{3}$ millim. . *quadrinotatus.*
$d''$. Form oblong-oval, convex; antennæ long and slender; elytra nigro-piceous, the head and prothorax black, the sides of the latter rufescent: length $3\frac{1}{3}$–$3\frac{2}{3}$ millim. . . . . *longulus.*
$e''$. Form oblong, subparallel, depressed; antennæ long and very slender; body rufo- or fusco-testaceous: length $2\frac{3}{4}$–3 millim. . . . . *angustatus.*
$f''$. Form short-elliptic: length 2–$2\frac{1}{2}$ millim.
$k'''$. Prothorax densely, distinctly punctate; antennæ exceedingly slender; body testaceous . . . . . *puncticollis.*
$l'''$. Prothorax more sparsely and more minutely punctate; antennæ less slender; body obscure testaceous or fuscous.
$c^4$. Elytral punctuation minute . . . . . *salicis.*
$d^4$. Elytral punctuation coarser; form more rounded . . . . . *scymnoides.*

Scirtes pseudicornis Champ. San Francisco, Cayo [illegible] Biol. Centr. Am. Tr. & S. Sämtl., 1913, p. 670
" championi Pirado, Costa Rica (1913?)

### 1. **Scirtes oblongus.** (Tab. XXVI. figg. 28; 28 *a*, hind coxæ.)

*Scyrtes oblongus*, Guér. Rev. et Mag. Zool. 1861, p. 546[1].

*Hab.* Mexico, Vera Cruz (*Sallé*), Yucatan (*Pilate* [1]); Guatemala, Panzos (*Champion*).

In a series of nineteen examples from Panzos, on the River Polochic, one only belongs to the pallid form described by Guérin. The other specimens may be described as having black or piceous elytra, each with three or four long oblique lines on the disc, the second the broadest, and usually extending from the base to near the apex, and the suture, base, and sides, pale testaceous; the pale lines on the disc are sometimes obliterated, but their position is generally indicated by lines of pallid pubescence. These examples have the antennæ black or piceous, except at the base, the thorax usually more or less infuscate on the disc, the scutellum piceous, and the legs, the basal half of the femora excepted, suffused with piceous. The entire upper surface is densely, minutely punctate, and thickly clothed with fine sericeous pubescence. The antennal joints 4–10 become gradually shorter outwards. *S. oblongus* may be readily identified by its elongate shape, and by the rounded and acutely margined sides of the thorax, the latter widest before the base, appearing narrowed behind. The single specimen from the Sallé collection belongs to the pallid form. A well-marked example from Panzos is figured. The insect lives upon willows.

### 2. **Scirtes cæruleus.** (Tab. XXVI. fig. 29.)

Transversely orbicular, very convex, shining; head, prothorax, and scutellum black, the elytra bluish-violaceous, the body beneath, antennæ, and legs testaceous; the upper surface clothed with short, semierect, rather coarse, cinereous hairs. Head minutely punctulate, the eyes rather prominent; antennæ slender, joint 3 very short, the following joints elongate (7–11 broken off); prothorax very short, forming a continuous outline with the elytra when viewed from above, very minutely punctulate, the sides finely margined and a little rounded, the anterior and hind angles obtuse; scutellum minutely punctulate; elytra gibbous, abruptly declivous and very obtuse behind, deeply emarginate in front for the reception of the prothorax, finely margined, thickly, finely punctate, the epipleuræ excessively broad and concave in their anterior half; legs very stout, comparatively short, the tibiæ distinctly bicarinate externally, the hind pair strongly bowed inwards. Posterior coxæ contiguous, abruptly quadrangularly dilated inwards.

Length $3\frac{3}{4}$, breadth $3\frac{1}{2}$ millim.

*Hab.* Panama, Bugaba (*Champion*).

One female example. This extraordinary insect has entirely the facies of an *Azya*, of the family Coccinellidæ. The pubescence is abraded on the disc of the thorax and elytra. The puncturing of the head, thorax, and scutellum is only visible under a strong lens, that of the elytra being much coarser. The legs are unusually stout. The elytra, when viewed laterally, are sinuous at the sides behind the middle, appearing arcuately dilated anteriorly.

### 3. **Scirtes rotundatus.** (Tab. XXVII. fig. 1.)

Rotundate, convex, shining; rufo-testaceous, the elytra with about the apical two-thirds black, the antennæ testaceous, with the apical three or four joints infuscate, the legs testaceous, with the posterior femora

reddish at the tip; the upper surface rather sparsely clothed with fine decumbent yellowish hairs. Head, prothorax, and scutellum very finely punctate; antennæ long and slender, joint 3 small, shorter than 2, 4–11 very elongate, the outer joints diminishing in length; prothorax convex, very short, rapidly narrowing from the base, acutely margined at the sides; elytra rather coarsely, not very closely punctate, acutely margined at the sides.

Var. *α*. The elytra with a large common patch at the base (not extending to the scutellum), or the apex, piceous.

Var. *β*. The elytra immaculate.

Length 3–3½, breadth 2½–2⅔ millim.

*Hab.* Mexico, Atoyac in Vera Cruz (*H. H. Smith*); Panama, Bugaba and David in Chiriqui (*Champion*).

Ten specimens from Chiriqui and one from Mexico, four only (all from Bugaba) being of the typical form. The unicolorous rufo-testaceous variety has very much the appearance of a *Sphæroderma*, of the family Halticidæ. *S. rotundatus* closely approaches *S. thoracicus* and *S. circumcinctus*, but has more coarsely punctured elytra, the punctuation also being closer than in *S. circumcinctus*. From *S. pilatei* in all its varieties it may be known by the more rotundate shape, and the sparser, finer, and shorter pubescence. A typical specimen from Bugaba is figured.

### 4. **Scirtes circumcinctus.** (Tab. XXVII. fig. 2.)

Rotundate, convex, shining; head black or brown, the prothorax rufo-testaceous, becoming indeterminately flavous at the sides, the disc in one specimen stained with piceous, the scutellum black or piceous, the elytra brown, usually with the sutural, basal, and lateral margins black or piceous; the antennæ testaceous, with the three or four terminal joints more or less infuscate; the legs and under surface brown, the tarsi, and sometimes the tibiæ also, testaceous; the upper surface sparsely clothed with fine pallid pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ moderately long, slender, joint 3 small, shorter than 2, 4–11 elongate, the outer joints diminishing in length; prothorax very short, convex, rapidly narrowing from the base, acutely margined at the sides; elytra sparsely, finely punctate, the punctuation distinctly coarser than that of the prothorax, acutely and narrowly margined at the sides.

Length 3–3½, breadth 2–2½ millim.

*Hab.* Panama, Bugaba and David (*Champion*).

Seven specimens, one of which has a piceous mark on the disc of the thorax. The elytra usually have the sutural, basal, and lateral margins darker than the rest of the surface. At first sight *S. circumcinctus* would appear to be nothing more than a colour-variety of *S. thoracicus*, but it has the elytra distinctly more sparsely and more finely punctate.

### 5. **Scirtes thoracicus.** (Tab. XXVII. fig. 3.)

Broad-oval, convex, shining; black, the prothorax with the sides broadly flavous, the elytra in one specimen indeterminately reddish-brown near the suture, the antennæ testaceous, with the three or four outer joints infuscate, the legs piceous or brown, with the tarsi and the anterior and middle tibiæ testaceous; the upper surface clothed with fine pallid pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ rather long and slender, joint 3 small, shorter than 2, 4–11 elongate, the outer joints diminishing in length; prothorax very short, convex, rapidly narrowing from the base, acutely margined

at the sides; elytra thickly, finely punctate, the punctuation coarser than that of the prothorax, narrowly and acutely margined at the sides.

Var. $\alpha$. Piceous or brown, the sides of the prothorax broadly flavous; the antennæ with the apical two or three joints only infuscate; the legs fusco-testaceous.

Var. $\beta$. Black, the prothorax reddish-yellow, paler at the sides; the antennæ brown, with the five basal joints testaceous.

Length 3–4, breadth $2\frac{1}{8}$–$2\frac{2}{3}$ millim.

*Hab.* MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Yzabal (*Sallé*); PANAMA, Bugaba (*Champion*), Colon (*Janson*).

Thirteen examples: seven of the typical form, from Atoyac and Teapa; five of the var. $\alpha$, from Panama; and one of the var. $\beta$, from Yzabal. This insect is very like *S. circumcinctus*, but it has more coarsely and more closely punctured elytra. It varies greatly in colour, like *S. suborbiculatus* and other species of the genus. The shorter and finer pubescence and sparser elytral punctuation separate it from *S. pilatei*. A specimen from Teapa is figured.

### 6. **Scirtes scapularis.** (Tab. XXVII. fig. 4.)

Broadly elliptic, moderately convex, shining; deep black, the prothorax and an oblong humeral patch on each elytron rufo-testaceous, the antennæ black, with the second and third joints obscurely rufescent, the legs black, with the tips of the tarsi and the tibial spurs testaceous; the upper surface thickly pubescent, the pubescence rather coarse, partaking of the ground-colour. Head, prothorax, and scutellum somewhat sparsely, minutely punctate; antennæ stout, moderately long, joint 3 small and shorter than 2, 4–11 longer than broad, 4–10 subequal in length; prothorax convex, very short, rapidly narrowing from the base; elytra closely, finely punctate, the punctuation coarser than that of the prothorax, acutely and narrowly margined at the sides.

Length 4, breadth $2\frac{1}{2}$ millim.

*Hab.* MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One example. Not closely allied to any of the other species here enumerated, and easily distinguished by the black body, legs, and antennæ and the reddish thorax and shoulder-spot. From the somewhat similarly-coloured var. $\alpha$ of *S. pilatei* it may be separated by its more oblong, less convex shape, the shorter and stouter antennæ, the black limbs and under surface, and finer pubescence. The antennal joints 4–10 are subequal in length, the insect differing in this respect from most of the other species of the genus.

### 7. **Scirtes pilatei.**

*Scyrtes pilatei*, Guér. Rev. et Mag. Zool. 1861, p. 545[1].

Broadly elliptic, rather convex, shining; varying in colour from piceous to rufo-testaceous, the antennæ testaceous, with the apical one or two joints infuscate, the legs testaceous, with the posterior femora usually darker; the upper surface thickly clothed with rather long and coarse decumbent yellowish- or fulvo-cinereous hairs. Head, prothorax, and scutellum very finely punctate; antennæ long and slender, joint 3 about as long as 2, 4–11 very elongate, the outer joints diminishing in length; prothorax convex, very short, rapidly narrowing from the base, acutely margined at the sides; elytra thickly, finely punctate, the punctuation coarser than that of the prothorax, narrowly and acutely margined at the sides.

Var. $\alpha$. The head, prothorax, scutellum, and a large humeral patch on each elytron (sometimes extending along the base to the suture) fulvous, the rest of the elytra black or piceous.

Var. $\beta$. Obscure rufo-testaceous, the elytra with the base and the sides to about the middle, and sometimes the apical half of the suture, as well as the prothorax in part, infuscate or black.

Length 3–4½, breadth 2⅓–3 millim.

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*), Yucatan (*Pilate* [1]); GUATEMALA, Las Mercedes, Pantaleon, Zapote, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui, Caldera, David (*Champion*).

This appears to be the commonest and most widely distributed species of the genus in Central America. It is very variable in colour, and also in size. The varieties occurred both in Guatemala and Panama in company with the type. Some of the smaller Panama specimens are a little more rotundate in shape, but I cannot separate them. The elytral pubescence is longer and coarser than in any of the allied forms. The insect was collected in numbers at Las Mercedes and Bugaba. I apply Guérin's name to this species with some hesitation, as it is impossible to identify his insect from the brief description *. *S. fuscus*, Chevr., from Cuba, appears to be a closely allied form.

### 8. **Scirtes ellipticus.**

Broadly elliptic, moderately convex, shining; obscure testaceous, the prothorax yellowish, the elytra narrowly bordered with piceous at the base, the antennæ and legs testaceous; the upper surface thickly clothed with short, decumbent, rather coarse, pallid hairs. Head, prothorax, and scutellum thickly, minutely punctate; antennæ long and slender, joint 3 slightly shorter than 2, 4–8 very elongate (9–11 broken off); prothorax convex, very short, somewhat rounded at the sides, narrowing from the base; elytra closely, very finely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides.

Length 4, breadth 2½ millim.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

One specimen. Very near *S. pilatei*, but differing from it in the much finer and closer punctuation of the elytra, the shorter pubescence, the rather more rounded sides of the thorax, and the somewhat narrower general shape. The elytral punctuation is coarser and sparser than in *S. tenuicornis*.

### 9. **Scirtes pulicarius.**

Elliptic, moderately convex, shining; brown or pitchy-brown, the suture of the elytra paler, the head and prothorax testaceous or brownish-testaceous, the prothorax with the sides and base paler in one specimen, the antennæ brown with the basal joints testaceous or entirely testaceous, the legs testaceous; thickly clothed with fine pallid pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ long and very slender, joint 3 short, about as long as 2, 4–11 elongate, gradually decreasing in length; prothorax short and convex, narrowing from the base, finely margined at the sides; elytra closely, very finely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides.

Length 2¼–3, breadth 1⅗–2 millim.

*Hab.* GUATEMALA, Mirandilla (*Champion*); PANAMA, Bugaba (*Champion*).

* It would apply almost equally well to *S. rotundatus*.

A single example from each locality, the one from Panama being a good deal smaller and more rotundate than the other, but agreeing with it in the long and slender antennæ. This insect is allied to *S. tenuicornis*, but may be known from it by the less densely punctured elytra, sparser pubescence, and rather shorter antennæ. From *S. suborbiculatus* in all its varieties it differs in the longer and more slender antennæ; and from *S. pilatei* by its much smaller size, shorter pubescence, finer punctuation, &c. A specimen from Guatemala city probably belongs here; it has a common oblong pallid central spot on the elytra before the middle.

### 10. **Scirtes tenuicornis.**

Elliptic, rather broad, moderately convex, slightly shining; head, prothorax, scutellum, and under surface fusco-testaceous, the elytra fuscous, the antennæ with the basal six joints testaceous, the others infuscate, the legs testaceous; the upper surface thickly clothed with fine pallid sericeous pubescence. Head, prothorax, and scutellum densely, very minutely punctate; antennæ very long and very slender, joint 3 about as long as 2, 4–11 very elongate, the outer joints diminishing in length; prothorax convex, very short, rapidly narrowing from the base, finely margined at the sides; elytra densely, minutely punctate, the punctuation scarcely coarser than that of the prothorax, narrowly and acutely margined at the sides.

Length $3\frac{1}{4}$, breadth $2\frac{1}{4}$ millim.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

One example. Similar to *S. pilatei* in shape, but much smaller, more finely pubescent, the antennæ more slender, and the elytra densely, minutely punctate. In the present insect the punctuation of the elytra is scarcely coarser than that of the head and thorax, a character separating *S. tenuicornis* from most of the allied forms.

### 11. **Scirtes ater.**

Elliptic, rather broad, convex, shining; black, the antennæ testaceous, with the apical joint slightly infuscate, the legs piceous, with the knees reddish and the tarsi testaceous; sparsely clothed with very fine fuscous pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ moderately long and slender, joint 3 very small, much shorter than 2, 4–11 elongate, gradually decreasing in length; prothorax short and convex, narrowing from the base, acutely margined at the sides; elytra somewhat thickly, very finely punctate, the punctuation distinctly coarser than that of the prothorax, narrowly margined at the sides.

Length 3, breadth 2 millim.

*Hab.* PANAMA, Bugaba (*Champion*).

One specimen. Very like *S. saltator*; but of less regularly oval shape (less narrowed in front and behind), the elytra a little more sparsely punctured and with darker pubescence, the antennæ with a much shorter third joint. The rather larger size and the very differently formed antennæ separate it from *S. longicornis*, and the smaller size, narrower shape, finer punctuation, very fine and sparse pubescence, &c., from *S. pilatei*.

### 12. **Scirtes longicornis.**

Elliptic, moderately convex, shining; nigro-piceous, the head and prothorax black, the margins of the latter rufescent, the antennæ piceous or obscure testaceous, with the basal joints testaceous, the legs testaceous, with the femora partly piceous, the body beneath piceous or brownish; sparsely clothed with very fine brownish pubescence. Head, prothorax, and scutellum somewhat thickly, minutely punctate; head very broad, the eyes large and rather prominent; antennæ nearly as long as the body, not very slender, joint 3 very minute, scarcely more than half the length of 2, 4–11 very elongate, flattened, and equal in length; prothorax convex, short, narrowing from the base, sharply margined at the sides; elytra thickly, finely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides.

Length $2\frac{1}{4}$–3, breadth $1\frac{1}{2}$–$1\frac{4}{5}$ millim.

*Hab.* Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Seven examples. This small species may be at once identified by the usually elongate antennæ, these organs being nearly as long as the body: the third joint is very minute, and the following ones very long and flattened. The specimens show no variation in colour, except that the antennæ and under surface are paler in some of them.

### 13. **Scirtes collaris.**

Elliptic or rotundate-elliptic, rather convex, shining; the head varying in colour from black to testaceous, the prothorax reddish-yellow or flavo-testaceous, in one specimen with a transverse black mark on the disc (perhaps due to discoloration), the scutellum piceous or black, the elytra black or pitchy-black, the body beneath piceous, the antennæ black or piceous, with the basal three or four joints testaceous, the legs varying in colour from piceous to testaceous; the elytra clothed with fine brownish pubescence, the head and prothorax with pallid pubescence. Head, prothorax, and scutellum thickly, very minutely punctate; antennæ long and rather stout, joint 3 extremely small, much shorter than 2, 4–11 elongate, gradually decreasing in length; prothorax very short and convex, narrowing from the base, finely margined at the sides; elytra thickly, finely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides.

*Var.* The elytra with a common reddish-yellow sutural stripe, extending from a little below the scutellum to the apex and narrowing posteriorly.

Length $2\frac{1}{2}$–$2\frac{4}{5}$, breadth $1\frac{1}{2}$–$1\frac{7}{8}$ millim.

*Hab.* Guatemala, Cubilguitz, Chiacam, and San Gerónimo in Vera Paz, San Isidro (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Six specimens of the typical form—three from Vera Paz and three from Chiriqui—and two of the variety, the latter being from San Isidro. The variety closely resembles the North-American *S. orbiculatus* (Fabr.), but differs from it in the much longer and darker antennæ; the elytra are punctured exactly as in that species. In the typical examples there is no trace of a common central spot on the elytra. From *S. ater*, which also has an extremely small third antennal joint, it may be easily known by its smaller size and less convex shape, and the stouter and blacker antennæ, as well as by the colour of the thorax.

### 14. **Scirtes suborbiculatus.** (Tab. XXVII. fig. 5, var.)

Rotundate-elliptic, rather convex, shining, finely pubescent; the head varying in colour from black to testaceous; the prothorax yellow or reddish-yellow, usually with four black or piceous spots on the disc, these sometimes united and forming a broad cruciform patch, and sometimes indistinct or entirely

obliterated; the scutellum varying in colour from black to testaceous; the elytra black, piceous, or brownish, with a common oblong reddish-yellow mark of variable size about the middle, which is sometimes faint or obliterated; the antennæ testaceous, slightly infuscate at the tip; the legs testaceous, the hind femora sometimes partly piceous; the body beneath piceous or brownish. Head, prothorax, and scutellum thickly, very minutely punctate; antennæ moderately long and rather stout, joint 3 very small, shorter than 2, 4–10 gradually decreasing in length; prothorax very short, narrowing from the base, finely margined at the sides; elytra closely, very finely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides.

*Var.* The elytra with an additional reddish-yellow mark along the suture at the apex. (Fig. 5.)

Length $2\frac{1}{10}$–$2\frac{4}{5}$, breadth $1\frac{1}{2}$–$1\frac{7}{8}$ millim.

*Hab.* MEXICO, Presidio de Mazatlan (*Forrer*), Guanajuato (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Panzos and San Gerónimo in Vera Paz, Panajachel, Paso Antonio, Dueñas, Capetillo (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

Numerous examples, varying greatly in colour. The variety is from Mazatlan and Guanajuato. This species is extremely closely allied to the North-American *S. orbiculatus* (Fabr.) (= *centralis*, Say, and *lateralis*, Lec.), for a specimen of which we are indebted to Dr. Horn, only differing therefrom in the denser and finer punctuation of the elytra; it is equally variable in colour, except that the thorax does not become wholly piceous. The common central spot on the elytra is sometimes faint or obliterated.

### 15. **Scirtes saltator.**

Oval, convex, shining; black, the lateral margins of the prothorax testaceous, the antennæ testaceous, infuscate at the tip, the legs piceous, with the tarsi and the four front tibiæ testaceous, the knees reddish; sparsely clothed with very fine fulvo-cinereous pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ moderately long and slender, joint 3 small, about as long as 2, 4–11 elongate, gradually decreasing in length; prothorax short and convex, narrowing from the base, acutely margined at the sides; elytra thickly, very finely punctate, the punctuation a little coarser than that of the prothorax, narrowly margined at the sides.

Length $3\frac{1}{10}$, breadth 2 millim.

*Hab.* GUATEMALA, Panzos (*Champion*).

One specimen. This species is of regularly oval shape, considerably more narrowed in front and behind than the similarly-coloured *S. longicornis*, from which it may be easily separated by the very much shorter and slender antennæ, with longer third joint; it is also larger and more convex, and has smaller and less prominent eyes. The general shape is very like that of various *Psylliodes*, of the family Halticidæ.

### 16. **Scirtes quadrinotatus.** (Tab. XXVII. fig. 6.)

Oval, convex, shining; head reddish-yellow, with the base black; the prothorax reddish-yellow, with a patch on the middle of the disc, extending to the anterior margin, and connected laterally with a spot opposite the eyes, brown; the scutellum piceous, paler at the apex; the elytra brownish-testaceous, with the base and apex narrowly, and a rather large lateral patch about the middle, black; the antennæ piceous, with the basal five joints testaceous; the legs testaceous, with the tarsi slightly infuscate; the body

beneath piceous, the abdomen paler; the upper surface clothed with fine pallid pubescence. Head, prothorax, and scutellum thickly, minutely punctate; antennæ moderately long, not very slender, joint 3 small, scarcely as long as 2, 4–11 rather elongate, gradually decreasing in length; prothorax convex, short, narrowing from the base, finely margined at the sides; elytra thickly, finely punctate, the punctuation a little coarser than that of the prothorax, narrowly margined at the sides.

Length $2\frac{2}{3}$, breadth $1\frac{2}{3}$ millim.

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*).

One specimen. This insect is of the same general shape as *S. saltator*; but it is a little shorter and smaller, the antennæ are less elongate and not so slender, and the sides of the thorax are much more feebly margined. These differences preclude the possibility of its being a colour-variety of that species. The elytra appear to have a reddish-yellow spot a little below the humeri, immediately in front of the lateral black patch.

### 17. **Scirtes longulus.**

Oblong-oval, convex, shining; nigro-piceous, the head and prothorax black, the margins of the latter rufescent, the antennæ with the basal 4–6 joints testaceous, the others black or brown, the legs testaceous, with the femora piceous, except at the apex; the upper surface clothed with short, fine, decumbent, fulvo-cinereous hairs. Head, prothorax, and scutellum sparsely, minutely punctate; antennæ long and slender, joint 3 as long as 2, 4–11 very elongate, the outer joints diminishing in length; prothorax very short, convex, narrowing from the base, sharply margined at the sides; elytra rather elongate, thickly, finely punctate, the punctuation much coarser than that of the prothorax, narrowly margined at the sides.

Length $3\frac{1}{3}$–$3\frac{2}{3}$, breadth 2 millim.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

Three specimens. The only other Central-American species nearly allied to this is *S. angustatus*, from which the present insect may be distinguished by its more convex shape, larger size, and coarser punctuation, as well as by its darker colour. It is much narrower and more oblong than *S. pilatei*, &c.

### 18. **Scirtes angustatus.**

Oblong, subparallel, narrow, depressed, shining; obscure rufo- or fusco-testaceous, the elytra a little darker than the head and prothorax, the antennæ and legs entirely testaceous; thickly clothed with fine pallid pubescence. Head, prothorax, and scutellum somewhat closely, extremely minutely punctate; antennæ long and very slender, joint 3 as long as 2, 4–11 very elongate, the outer joints decreasing in length; prothorax convex, short, feebly rounded and acutely margined at the sides, narrowing from the base; elytra long, flattened or transversely depressed on the disc a little below the base, very closely, minutely punctate, the punctuation coarser than that of the prothorax, narrowly margined at the sides; upper spur of the posterior tibiæ barely half the length of the first tarsal joint.

Length $2\frac{3}{4}$–3, breadth $1\frac{1}{2}$–$1\frac{2}{3}$ millim.

*Hab.* PANAMA, Caldera and David in Chiriqui (*Champion*).

Three specimens. Differs from all our other species in its narrow, depressed, subparallel shape, the insect having very much the facies of a small *Cyphon*. The upper spur of the hind tibiæ is shorter than usual.

### 19. **Scirtes puncticollis.**

Elliptic, short, moderately convex, shining, testaceous, thickly and finely pubescent. Head, prothorax, and scutellum densely, minutely punctate; antennæ long and exceedingly slender, joints 2 and 3 subequal, 4–11 elongate, gradually decreasing in length; prothorax very short and convex, narrowing from the base, acutely margined at the sides; elytra closely, minutely punctate, the punctuation a little sparser and more distinct than that of the prothorax, narrowly margined at the sides.

Length 2–2½, breadth $1\frac{1}{3}$–$1\frac{3}{5}$ millim.

*Hab.* GUATEMALA, El Tumbador (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

One specimen from each locality. The description is taken from the Bugaba example, the others being in a bad state of preservation. This very small species resembles *S. salicis*; but it is more oval in shape, the antennæ are longer and much more slender, and the thorax is more distinctly punctured. The three specimens agree in this last-mentioned character. The dense, distinct punctuation of the thorax gives it a dull appearance.

### 20. **Scirtes salicis.**

Elliptic, rather narrow, shining; fusco- or obscure rufo-testaceous, the head and prothorax sometimes a little paler than the elytra, the legs and antennæ testaceous, the basal joints of the latter paler; thickly clothed with fine pallid pubescence. Head, prothorax, and elytra thickly, very minutely punctate; antennæ moderately long and slender, joint 3 small, a little shorter than 2, 4–11 rather elongate, gradually decreasing in length; prothorax short and convex, narrowing from the base, finely margined at the sides; elytra thickly, minutely punctate, the punctuation a little coarser than that of the prothorax, narrowly margined at the sides; upper spur of the posterior tibiæ rather more than half the length of the first tarsal joint.

Length 2–$2\frac{1}{10}$, breadth $1\frac{1}{8}$–$1\frac{1}{4}$ millim.

*Hab.* GUATEMALA, Panzos (*Champion, Conradt*).

Found in numbers on willows on the banks of the River Polochic. This is one of the smallest and most obscure of the Central-American species of the genus. It is allied to *S. angustatus*, but is very much smaller and less elongate. The insect has entirely the aspect of a very small *Cyphon*.

### 21. **Scirtes scymnoides.**

Elliptic, short, rather convex, shining; rufo-testaceous, or fuscous with the basal and apical margins of the prothorax and the scutellum reddish, the antennæ and legs testaceous; thickly clothed with fine pallid pubescence. Head, prothorax, and scutellum very minutely punctate; antennæ moderately long and slender, joint 3 small, about as long as 2, the others elongate; prothorax very short and convex, narrowing from the base, finely margined at the sides; elytra thickly, finely punctate, the punctuation much coarser than that of the protharax, narrowly margined at the sides; upper spur of the posterior tibiæ about half the length of the first tarsal joint.

Length 2, breadth $1\frac{1}{3}$–$1\frac{2}{5}$ millim.

*Hab.* PANAMA, Bugaba (*Champion*).

Two examples. Very like *S. salicis*, but shorter and more convex, the elytra not so finely punctured, the punctuation being much coarser than that of the thorax. The insect resembles a *Scymnus*, of the family Coccinellidæ.

## CYPHON.

*Cyphon*, Paykull, Fauna Suecica, ii. p. 117 (1799); Jacquelin Duval, Gen. Col. Europ. iii. p. 151; Tournier, Dascillides du Bassin Léman, p. 48; Horn, Trans. Am. Ent. Soc. viii. p. 105.

A very widely distributed genus, both in the northern and southern hemispheres, being particularly numerous in species in New Zealand, but apparently poorly represented within the tropics. Several of the Central American forms have the elytra foveate or impressed in the females and normal in the males. These insects are found upon low plants in marshy places.

*a*. Antennæ with joint 3 very small, much shorter than 2; head much narrower than the prothorax, the eyes rounded; elytra usually with more or less distinct raised lines on the disc or at the sides, at least in the female, and with depressions or foveæ, and also more or less truncate at the apex, in this sex; body elongate, oblong-oval, or elliptic (♀), oval (♂).

*a'*. Prothorax distinctly explanate at the sides; each elytron (♀) with a very deep pyriform impression at the apex . . . . . *bifoveolatus*.

*b'*. Prothorax not or very slightly explanate at the sides.

*a''*. Body elongate (♀): (♂ unknown).

*a'''*. Each elytron (♀) with two deep foveæ—one at the base and the other at the apex . . . . . *quadrifoveolatus*.

*b'''*. Each elytron (♀) with a single deep fovea at the apex . . . . . *parallelus*.

*b''*. Body elliptic (♀).

*c'''*. Antennæ slender: (♂ unknown).

*a*⁴. Each elytron (♀) with two large shallow depressions—one at the base and the other at one-third from the apex; the apex not abruptly truncate . . . . . *impressipennis*.

*b*⁴. Each elytron (♀) with two depressions—one at the base, foveiform and rather deep, the other large and shallow, at one-third from the apex; the apex abruptly truncate . . . . . *truncatus*.

*d'''*. Antennæ stouter: (body oval, ♂) (♀ unknown). . . . . *atratus**.

*b*. Antennæ with joints 2 and 3 subequal in length, or 3 very little shorter than 2; head much narrower than the prothorax, the eyes rounded; elytra without raised lines or impressions.

*c'*. Elytral punctuation fine: colour variable; antennæ more or less infuscate, at least at the tip . . . . . *variabilis*.

Elytral punctuation coarser: colour uniform reddish-ochraceous; antennæ entirely testaceous . . . . . *guatemalensis*.

*c*. Antennæ with joint 3 elongate, much longer than 2; head nearly as wide as the prothorax, the eyes very large and oval . . . . . *ampliceps*.

### 1. **Cyphon bifoveolatus.** (Tab. XXVII. fig. 7, elytron, ♀.)

♀. Oblong-oval, depressed, shining, finely pubescent; nigro-piceous or piceous, the front of the head and the lateral margins of the prothorax testaceous, the legs and antennæ testaceous, the latter sometimes infus-

* Perhaps wrongly placed here, the female being unknown.

cate at the tip, the body beneath reddish-brown. Head moderately broad, thickly, very minutely punctate, the eyes rounded and rather small; antennæ long and slender, more than half the length of the body, joint 3 small, shorter than 2, the other joints elongate. Prothorax very short and broad, moderately convex, the sides gradually converging forwards, distinctly explanate, and acutely margined; the surface punctured like that of the head. Elytra rather elongate, somewhat parallel in their basal half, flattened on the disc, the humeri rounded, the apices obliquely truncate; closely, very finely punctate, the punctuation a little coarser than that of the prothorax, with three faint raised lines—two on the disc, oblique, and one at the sides; each elytron with a very deep, large, oblique, pyriform impression on the inner part of the disc immediately before the apex, the impressions extending to the suture, with their narrow ends forwards.

♂. Oval, rather convex; the elytra without impressions near the apex, a little flattened on the disc towards the base, the raised lines on the disc very faint or obliterated, the apices rounded.

Length $2\frac{1}{4}$–$2\frac{4}{5}$, breadth $1\frac{2}{5}$–$1\frac{1}{2}$ millim.

*Hab.* Guatemala, San Isidro (*Champion*); Panama, Caldera, David and Tolé in Chiriqui (*Champion*).

Eleven females and four males, all but one, a male, from Chiriqui.

The males are very dissimilar from the females, but, as they were obtained in company at David, there can be no doubt that they belong to one species. The genitalia of both sexes have been examined. The deep ante-apical foveæ of the elytra in the female extend obliquely forwards, and are pyriform in shape, their narrow ends meeting at the suture. The margins of the thorax are explanate. The sculpture of the apices of the elytra is very like that of the males of various species of *Malachius*. The localities for this insect are all on the Pacific slope, and in the "tierra caliente."

### 2. **Cyphon quadrifoveolatus.** (Tab. XXVII. fig. 8, elytron, ♀.)

♀. Elongate, narrow, subparallel, depressed, shining, finely pubescent; piceous, the legs and antennæ testaceous, the latter slightly infuscate at the tip. Head moderately wide, closely, minutely punctate, the eyes small and rounded; antennæ about half the length of the body, joint 3 very small, much shorter than 2, 4 elongate, longer than 5, the others longer than broad. Prothorax very short and broad, moderately convex, the sides gradually converging forwards and sharply margined; the surface closely, distinctly punctate. Elytra rather elongate, subparallel in their basal half, flattened on the disc, the margins not visible from above, the humeri rounded, the apices obliquely truncate, the disc with indications of one or two raised lines; the surface closely, very finely punctate, the punctuation a little coarser than that of the prothorax; each elytron with a very deep, large, oblique, oval impression at the base within, and a very deep, large, round fovea on the inner part of the disc immediately before the apex, the foveæ extending to the suture.

Length 2–$2\frac{1}{2}$, breadth 1–$1\frac{1}{4}$ millim.

*Hab.* Mexico, Cuernavaca in Morelos (*H. H. Smith*); Guatemala, San Gerónimo (*Champion*).

Two female examples of this peculiar insect have been obtained. It approaches *C. impressus*, Lec., from Florida. The following is an allied form.

### 3. **Cyphon parallelus.** (Tab. XXVII. fig. 9, elytron, ♀.)

♀. Elongate, narrow, subparallel, depressed, shining, finely pubescent; piceo-testaceous, the legs and antennæ testaceous, the latter infuscate at the tip. Head moderately wide, closely, minutely punctate, the eyes rounded and very small; antennæ moderately slender, about half the length of the body, joint 3 very

small, much shorter than 2, 4 elongate, longer than 5, 5–10 decreasing in length. Prothorax very short, rather convex, the sides a little rounded and converging in front; the surface closely, minutely punctate. Elytra rather elongate, subparallel in their basal half, the apices obliquely truncate; the surface closely, very finely punctate, the punctuation a little coarser than that of the prothorax; each elytron with a very deep, large, round fovea adjoining the suture immediately before the apex.

Length $2\frac{1}{10}$, breadth 1 millim.

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

One immature example. This insect would appear, at first sight, to be the male of *C. quadrifoveolatus*, it having been found at the same locality; but the form of the genitalia proves it to be a female. *C. parallelus* differs from the female of that species in the complete obliteration of the basal impressions on the elytra, as well as in its more parallel shape, smaller eyes, and more convex thorax.

### 4. **Cyphon impressipennis.** (Tab. XXVII. fig. 10, elytron, ♀.)

♀. Elliptic, rather narrow, feebly convex, shining, finely pubescent; piceous, the elytra paler towards the base and suture, the front of the head, the antennæ, and legs testaceous. Head moderately broad, sparsely, minutely punctate, the eyes rounded and rather small; antennæ long and slender, joint 3 small, shorter than 2, the following joints elongate. Prothorax very short, moderately convex, the sides slightly explanate, rounded, and converging forwards; the surface sparsely, very minutely punctate. Elytra moderately long, a little narrowed in front, obliquely truncate at the apex; the surface closely, very finely punctate, with a raised line at the sides; each elytron with a large, oval, slightly oblique, depressed space at the base within, and a large oblong-oval depressed space adjoining the suture at about one-third from the apex, densely, rugulosely punctate.

Length 2–$2\frac{1}{4}$, breadth $1\frac{1}{5}$–$1\frac{1}{3}$ millim.

*Hab.* GUATEMALA, San Isidro (*Champion*); PANAMA, Caldera in Chiriqui (*Champion*).

One female from each locality, both in a bad state of preservation. This insect is allied to *C. truncatus*, but it is less depressed; the thorax is broader and more dilated at the sides; and the elytra are less abruptly truncate at the apex, with the basal depressions very much larger and shallower. Both the localities are on the Pacific slope, in the "tierra caliente."

### 5. **Cyphon truncatus.** (Tab. XXVII. fig. 11, elytron, ♀.)

♀. Oblong, subparallel, depressed, shining, finely pubescent; piceous, the front of the head, antennæ, and legs testaceous. Head moderately broad, sparsely, minutely punctate, the eyes rounded and rather small; antennæ slender, joint 3 small, shorter than 2, the other joints much longer than broad. Prothorax very short, moderately convex, the sides a little rounded and gradually converging forwards; the surface minutely, somewhat sparsely punctate. Elytra rather elongate, subparallel in their basal half, flattened on the disc, the humeri rounded, the apices abruptly and somewhat obliquely truncate; the surface closely, very finely punctate, the disc with indications of two raised lines; each elytron with a small, oblique, rather deep, oval depression at the base within and a large, somewhat oval, depressed space on the inner part of the disc at about one-third from the apex, the depressions densely, rugulosely punctured and opaque, the posterior one extending inwards to the suture.

Length 2, breadth $\frac{1}{10}$ millim.

*Hab.* GUATEMALA, Cahabon in Vera Paz (*Champion*).

One female specimen, in a bad state of preservation. In this insect the elytra have

each an oval depression at the base, as in the female of *C. quadrifoveolatus*, but the depression is smaller, shallower, and more rugose than in that species; the post-median depressed space is placed at about one-third from the apex, replacing the apical fovea of *C. quadrifoveolatus*. The elytra are broadly and abruptly truncate at the apex.

### 6. Cyphon atratus.

♂. Oval, rather convex, shining, finely pubescent; black or pitchy-black, the front of the head, the legs, and antennæ testaceous, the latter infuscate at the tip. Head moderately broad, sparsely, very minutely punctate, the eyes rounded and rather large; antennæ a little more than half the length of the body, not very slender, joint 3 very small, narrower and much shorter than 2, 4–10 gradually decreasing in length. Prothorax short and convex, narrowed in front, the sides a little rounded, the surface sparsely, very minutely punctate. Elytra very finely, closely punctate, the punctuation becoming still finer on the anterior part of the disc; in one specimen with indications of two faint oblique raised lines on the disc.
Length $1\frac{7}{8}$–$2\frac{1}{8}$, breadth $1\frac{1}{8}$–$1\frac{1}{3}$ millim.

*Hab.* Mexico, Cordova (*Höge*), Atoyac and Teapa (*H. H. Smith*); Guatemala, San Gerónimo, San Isidro (*Champion*); Nicaragua, Chontales (*Janson*).

Eight examples, differing a little *inter se*, seven of which are certainly, and the other probably, males. These specimens cannot be referred to any of the species described here from females only. *C. atratus* approaches *C. impressipennis*, but has stouter antennæ. Compared with males of *C. bifoveolatus*, it has these organs less elongate. The female probably has the elytra formed as in one or the other of the allied forms. The North-American *C. obscurus* (Guér.) is probably a near ally of *C. atratus*, but it is considerably larger.

### 7. Cyphon variabilis.

*Cantharis variabilis*, Thunb. Mus. Upsal. iv. p. 54 (1787) [1].
*Elodes variabilis*, Guér. Spec. et Icon. gén. des Anim. Art. livr. iii. no. 9, p. 4, tab. figg. 12, 13 [2].
*Cyphon variabilis*, Horn, Trans. Am. Ent. Soc. viii. p. 108 * [3].

Oval, moderately convex, shining, finely pubescent; variable in colour—rufo- or fusco-testaceous, the head and elytra sometimes suffused with piceous, the latter usually with a large yellowish patch at the apex, and in one specimen with a broad scutellar patch, a large patch at the sides, and a common oblong mark beyond the middle piceous; the legs and antennæ testaceous, the latter becoming more or less infuscate outwards, sometimes piceous, with the exception of the three basal joints. Head moderately broad, closely, very distinctly punctate, the eyes rounded and rather small; antennæ rather more than half the length of the body, joint 3 nearly or quite as long as 2, 4 elongate, 5–10 much shorter than 4, slightly decreasing in length. Prothorax short and convex, narrowing from the base, a little rounded at the apex in the middle, thickly minutely punctate, the punctuation becoming denser at the sides. Elytra thickly, finely, uniformly punctate, without trace of raised lines.
Length $2\frac{1}{8}$–3, breadth $1\frac{1}{4}$–$1\frac{2}{3}$ millim. (♂ ♀.)

*Hab.* North America [2], Hudson's Bay region to Florida and Texas [3], and also in Vancouver I.[3]—Mexico, Mexico city, Cerro de Plumas (*Höge*); Guatemala, Coban and San Gerónimo in Vera Paz, Dueñas, Champerico (*Champion*).—Europe [1 2].

* For the rest of the American synonymy, see Horn (loc. cit.).

I am unable to find any tangible character by which to separate the Central-American specimens, one of which was found in a mangrove-swamp on the sea-coast and others in the mountains, from the very widely distributed *C. variabilis*. Compared with European examples they are (with one exception, a female) considerably smaller and less elongate, but agree in other respects. It is advisable, however, to give a description of the Mexican and Guatemalan specimens. No less than six North-American species appear to have been described upon varieties of *C. variabilis*.

### 8. **Cyphon guatemalensis.**

Elliptic, moderately convex, shining; reddish-ochraceous, the eyes black, the antennæ and legs entirely testaceous; thickly clothed with rather long pallid pubescence. Head moderately broad, very minutely punctate, the eyes large and rounded; antennæ not very slender, rather more than half the length of the body, joints 2 and 3 equal in length, 4–10 moderately long, subequal, 11 much longer than 10. Prothorax short and convex, a little rounded at the apex in the middle, the sides converging from the base; the surface very minutely punctate. Elytra thickly, rather coarsely punctate, without trace of raised lines.

Length $2\frac{1}{2}$, breadth $1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Senahu in Vera Paz, Torola (*Champion*).

Two females and one male. This insect closely resembles the European *C. pallidulus*, Boh.; but it has differently formed antennæ, larger eyes, a smoother head and thorax, and more coarsely punctured elytra. The last-mentioned character separates it from the other Central-American species. The head and thorax are distinctly more sparsely punctured in the male than in the female. The elytral punctuation is uniform in both sexes.

### 9. **Cyphon ampliceps.**

♀. Elliptic, moderately convex, shining, finely pubescent; rufo-testaceous or piceous, the antennæ and legs testaceous. Head very broad, nearly as wide as the prothorax, very minutely, sparsely punctate, the eyes oval, large, and rather prominent; antennæ long, more than half the length of the body, joint 1 exceedingly stout, 2 oval, moderately stout, 3 elongate, slender, longer than 2 or 4, 4–10 decreasing in length, 11 oval, much longer than 10. Prothorax short and convex, a little rounded at the apex in the middle, the sides slightly rounded and converging anteriorly; the surface sparsely, very minutely punctate. Elytra flattened on the disc towards the base, thickly, finely punctate, the punctuation becoming coarser towards the sides and apex, with indications of two very faint raised lines on the disc, the apices conjointly rounded.

Length $1\frac{7}{8}$–2, breadth $1\frac{1}{10}$–$1\frac{1}{4}$ millim.

*Hab.* GUATEMALA, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui, Peña Blanca (*Champion*).

Differs from all the other Central-American species in the unusually broad head (this being very little narrower than the thorax), the large, oval, rather prominent eyes, and the elongate third joint of the antennæ. Three specimens: the one from the Volcan de Chiriqui is in a good state of preservation, the others being discoloured and broken.

## Subfam. *PTILODACTYLINÆ.*

## Group **HAPLOGLOSSINI.**

## HAPLOGLOSSA.

*Aploglossa,* Guérin, Spec. et Icon. des Anim. Art. livr. viii. no. 33, p. 1, tab. (1849) ; Lacordaire, Gen. Col. iv. p. 278 (nec Kraatz).

*Haploglossa,* Gemminger & Harold, Cat. vi. p. 1623.

The characters of this Tropical-American genus are given at considerable length by Guérin, but he did not notice the peculiar form of the mandibles, and nothing is said about the sterna. The following is supplemental to his description:—Mandibles armed on the inner side at the middle with two long, curved, slender hooks or teeth, and with a short tooth above and beneath before the apex; prosternum rather short and horizontal before the anterior coxæ, and produced between them into a very narrow lamella, which is received by a fine notch in the mesosternum, the prosternal process not raised; anterior coxæ subconical, strongly exserted, and with a moderately large trochantin; middle coxæ very narrowly separated, with a small trochantin; posterior coxæ narrowly separated, the coxal plates abruptly dilated inwards, but leaving the trochanters exposed, becoming exceedingly narrow outwards; prothorax margined at the sides behind.

The difference in the form of the fifth ventral segment is sexual, and not specific, as supposed by Guérin.

These insects are found upon bushes in damp places in the forest. One of them is very variable in colour, especially in the female sex.

Prothorax shining, rather sparsely punctured on the disc, subangularly dilated at the sides towards the base . . . . . *sallæi.*

Prothorax feebly shining, densely punctured throughout, abruptly and acutely dilated at the sides towards the base.

Body moderately broad; fifth ventral segment deeply emarginate in the male . . *collaris.*

Body narrow; fifth ventral segment feebly emarginate in the male . . . . . *angustata.*

### 1. **Haploglossa sallæi.**

♂. *Aploglossa sallei,* Guér. Spec. et Icon. des Anim. Art. livr. viii. no. 33, p. 2, tab. figg. 1–7 [1].

♀. *Aploglossa marginata,* Guér. loc. cit. p. 2 [2].

*Hab.* Mexico, Ventanas in Durango (*Höge*); Juquila and Panistlahuaca in Oaxaca (*Sallé*).—Venezuela, Caracas [1 2].

The seven specimens from Mexico before me—one from Durango and six from Oaxaca, including both sexes—agree very nearly with Guérin's descriptions, which are taken from male and female respectively, *H. marginata* being based upon a varietal

form of the female, of which we have a very similar specimen from Oaxaca. The Mexican examples, five of which are from Panistlahuaca, vary greatly in colour; the varieties may be thus described:—

α. Black, the prothorax with the basal and apical margins sometimes partly reddish; the trochanters, the tips of the tarsi and of the coxæ and the base of the femora, more or less testaceous. (♂ ♀.)—Mexico, Venezuela.

β. Black, the prothorax with a more or less distinct large reddish patch on either side at the base; the legs as in α. (♂.)—Mexico.

γ. Black, the prothorax with the sides broadly flavo-testaceous; the coxæ, trochanters, and femora (except at the tip in one example), the tips of the tarsi, and sometimes the metasternum also, flavo-testaceous. (♂ ♀.)—Mexico.

δ. Black, the prothorax, scutellum, coxæ, trochanters, and metasternum, the base of the tibiæ, the tips of the tarsi, and some spots at the sides of the abdomen, reddish-testaceous. (♂.)—Mexico.

ε. Black, the prothorax with the sides very broadly rufo-testaceous, the elytra with the suture and lateral margins (and sometimes the base also) testaceous; the trochanters, the tips of the coxæ and of the tarsi, the base of the femora and sometimes that of the tibiæ also, testaceous. (♀.)—Mexico, Venezuela.

The males have the antennæ exceedingly elongate (fully two-thirds the length of the body), and the fifth ventral segment deeply triangularly emarginate at the apex. In the females the antennæ are considerably shorter, and the fifth ventral segment is not emarginate. *H. sallæi* differs from the two other species of the genus in the more sparsely punctured and more shining thorax. The elytral sculpture—described as finely shagreened by Guérin—consists of fine, irregular, confluent punctures, the interspaces between which appear to be transversely or obliquely raised.

### 2. **Haploglossa collaris.** (Tab. XXVII. figg. 12, ♂; 12 *a*, mandible.)

♀. *Aploglossa collaris,* Guér. Spec. et Icon. des Anim. Art. livr. viii. no. 33, p. 3 [1].

*Hab.* Mexico, Toxpam, Juquila (*Sallé*); Guatemala, Yzabal (*Sallé* [1]), San Juan and San Gerónimo in Vera Paz, Zapote (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Found in plenty by myself at San Juan, in the Polochic valley, on the Atlantic slope. *H. collaris* is closely allied to *H. sallæi*, but less variable in colour, and differs from it in the more densely punctured, less shining thorax, the sides of which are more acutely dilated before the base. The antennæ in the males are about two-thirds, and in the females one-half, the length of the body. The thorax is more or less angularly dilated at the sides at about the basal third, and strongly narrowed behind, as well as in front. The elytra, as in both the allied species, sometimes have the suture and sides cinereo-pubescent, instead of being entirely fusco-pubescent as in the type. The fifth ventral segment is deeply triangularly emarginate at the apex. In the single (female) example from Juquila, which is somewhat doubtfully referred to *H. collaris*, the

front of the head and the disc of the thorax is rufous, and the usual median vitta of the latter is reduced to a spot in front and another behind. A specimen from San Juan is figured.

### 3. **Haploglossa angustata.**

Elongate, narrow, subparallel, feebly shining; black or brownish-black, the mandibles, the sides of the prothorax to a greater or less extent (in one specimen leaving only a narrow black median vitta), and sometimes the lateral margins of the elytra also, testaceous or flavo-testaceous; the antennæ entirely black; the legs obscure testaceous, sometimes partly infuscate; thickly pubescent, the pubescence on the upper surface fuscous, paler on the sides of the prothorax, and sometimes cinereous along the suture and lateral margins of the elytra, that on the under surface cinereous. Head dull, very densely, minutely punctate, the eyes prominent; antennæ in the male nearly two-thirds, in the female about half, the length of the body, moderately serrate from the third joint. Prothorax transverse, angularly dilated at the sides at about the basal third, rapidly and obliquely narrowing thence to the apex, and also narrowed behind; very densely, minutely punctate. Elytra elongate, subparallel in their basal half, very densely, rugulosely punctate, with indications of faintly impressed longitudinal lines. Fifth ventral segment feebly triangularly emarginate at the apex in the male, entire in the female.

Length $4\frac{1}{4}$–$6\frac{1}{4}$, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui, Caldera (*Champion*).

Two males and two females, one of the latter having the lateral margins of the elytra, and the thorax in great part, testaceous. This insect is narrower than *H. collaris*, with more feebly serrate antennæ, the fifth ventral segment in the male feebly emarginate, &c. The males are considerably smaller than the females. The thorax, as in *H. collaris*, is very densely punctured.

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Since the publication of my remarks on this genus (*anteà*, p. 623), an additional species has been detected in the collections under examination :—

### 4. **Haploglossa ferruginea.**

Elongate, parallel, moderately shining; fusco-ferruginous, the base of the head, the labrum, eyes, and antennæ, and the abdomen in great part, black, the legs testaceous; thickly clothed with fine decumbent pubescence, the upper surface with long semi-erect hairs intermixed, the pubescence brownish on the elytra, and yellowish-cinereous on the other parts of the body. Head densely, rugulosely punctured, the eyes prominent; antennæ elongate, serrate, moderately stout. Prothorax transverse, feebly subangularly dilated at the sides a little before the base (appearing slightly constricted behind), and rapidly narrowing thence to the apex; the surface closely, minutely punctate. Elytra much broader than, and five times the length of, the prothorax, parallel to beyond the middle; the surface densely rugulosely punctate, and with indications of faintly impressed longitudinal lines.

Length $7\frac{1}{2}$, breadth $2\frac{3}{4}$ millim. (♀.)

*Hab.* GUATEMALA, San Gerónimo (*Champion*).

One specimen. Allied to *H. collaris*, but larger and differently coloured, the antennæ less dilated than in the female of that species, the thorax feebly subangularly dilated a little before the base (at about the basal third in *H. collaris*), the elytra relatively longer, smoother, and more shining, the legs testaceous.

## TELON.

Head short, not produced in front, in repose resting upon the prosternum and invisible from above, sunk into the prothorax up to the eyes, the latter very large, rounded, and prominent; labrum very broad, short, prominent; mandibles acute, short, stout, curved, projecting beyond the labrum, armed with a sharp tooth on the upperside some distance before the apex; mentum broad, strongly transverse, narrowed in front; ligula in the form of two long tapering lobes; maxillary palpi very stout, the apical joint subsecuriform; labial palpi long and stout, the second joint elongate, the third joint subsecuriform; outer lobe of the maxillæ divided into two, the outer portion long and tapering, the inner portion short, both being ciliate, the inner lobe rather slender; antennæ with joint 1 stout, 2 very small, the other joints long and flattened, 3–10 very broadly and obliquely dilated within, with their inner apical angles obtuse; prothorax completely margined at the sides, semicircular, transversely swollen in front; scutellum transversely cordate; prosternum extremely short and vertical before the coxæ, and produced between them into a thin lamella, which is raised almost to the level of the coxæ, hooked at the tip, and received into a deep notch in the mesosternum; anterior coxæ oval, with large trochantin; middle coxæ narrowly separated, with small trochantin; posterior coxæ separated by a narrow intercoxal process, the coxal plates moderately dilated inwards; legs stout, the tibial spurs small; tarsi shorter than the tibiæ, the basal joint about as long as the second and third united, the third joint broadly dilated, excavate above, and extending to some distance beneath the fifth, its lower surface velvety-pubescent, the fourth joint very small, the claws feebly dilated towards the base; sixth ventral segment visible.

The above characters are taken from a single species of large size from Panama. This insect, which has very much the facies of a Lampyrid, is nearest allied to *Cladotoma*, Guér., a genus containing three Tropical-American species; but differs from it in the bilobate ligula, the bilobed outer portion of the maxillæ *, the shorter, subsecuriform apical joint of both palpi, &c. The antennæ might be described as broadly lamellate. The form of the tarsi agrees with that of the Ptilodactylini, except that the claws are only feebly dilated towards the base.

1. **Telon cucullatus.** (Tab. XXVII. figg. 14; 14 *a*, labium; 14 *b*, maxilla and maxillary palpus; 14 *c*, antenna.)

Broad, robust, oblong-oboval, subopaque; rufo-luteous, the eyes, the antennæ, the basal joint excepted, the palpi in great part, and the apical three-fourths of the elytra, black; beneath luteous, with the abdomen, except at the base on either side, black; the legs luteous to the basal third of the tibiæ, the rest of the tibiæ and the tarsi black; above and beneath densely, minutely punctate, and thickly clothed with very short fine pubescence, which partakes of the ground-colour, except on the abdomen, where it is fuscous. Head with indications of a smooth median line; antennæ about half the length of the body. Prothorax transverse, semicircular, bisinuate at the base, with the broad median lobe truncate; obsoletely canaliculate, and with two transverse depressions behind connected by a transverse groove; the basal margin bisinuate, finely denticulate. Scutellum finely denticulate in front. Elytra wider than, and four and one-third times the length of, the prothorax, widening to beyond the middle, compressed at the sides below the humeri, and sharply margined, with indications of four faint costæ. Fifth ventral segment entire.

Length 13, breadth $6\frac{3}{4}$ millim.

*Hab.* Panama (*Sallé*).

One example, probably a female. The locality seems to require confirmation.

* In *Cladotoma* the ligula and the outer portion of the maxillæ are both quadrilobate.

## Group **PTILODACTYLINI.**

## PTILODACTYLA.

*Ptilodactyla*, Latreille, Règne Anim. ed. 2, iv. p. 461 (1829); Lacordaire, Gen. Col. iv. p. 279; Horn, Trans. Am. Ent. Soc. viii. p. 90.

This neglected genus includes a very large number of species, and it is one of the most characteristic forms of Coleoptera in Tropical America, extending northwards to the Southern United States and southwards to Argentina. Of the forty-four described species, four only are from the Old World, the remainder being all American, these latter including two from the Southern States, four from Colombia, seven from Guiana, sixteen from Peru *, four from Brazil, one from Argentina, and six from Cuba. Not a single species, therefore, has up to the present time been described from within our limits, whence no fewer than fifty-nine are now recorded; and, judging from the numerous specimens left unnamed for want of sufficient material, and the limited area within which many of the others have been found, it is probable that more than one hundred species exist in Central America. To *Ptilodactyla* belong many very closely allied species, several of which can only be distinguished with certainty by the form of the fifth ventral segment in the males, or, in some cases, by that of the tarsal claws in this sex. The various species may be grouped by the form of the claws (when both sexes are available for examination), or by that of the scutellum—characters ignored by most of the writers on these insects.

The antennæ have joints 4–10† each furnished with an articulated ramus in the males, and are simply serrate in the females; in three species (*P. antennalis*, *P. humerosa*, and *P. tenuis*) the third joint is considerably shorter than the fourth. The apical joint of the maxillary palpi varies a little in length according to the species, but it is never greatly elongated, as in the males of the two insects here placed under *Lachnodactyla*. The eyes are large, often larger and more prominent in the males than in the females. The thorax is transverse, in most of the species semicircular or subconical in shape, and usually compressed at the sides before the middle, the anterior (as well as the lateral) margin being sometimes very prominent; the base is trisinuate or bisinuate, and usually more or less denticulate, often with a projecting tooth in the centre fitting into a notch in the front of the scutellum. The scutellum usually has a deep notch in front, and sometimes a well-defined, narrow, median sulcus as well, or is even broadly and deeply sulcate down the middle; in a few species there is no trace of emargination in front; it varies in size and also in shape, but the general shape is cordiform. The elytra in most of the species are very acutely margined at the sides; in *P. caudata* they differ in form in the two sexes. The thorax (and sometimes the other parts of the body

* Co-types of seven of these have been examined:—*P. vilis*, *P. præcellens*, *P. lamellifera*, *P. heterophya*, *P. angusta*, *P. secedens*, and *P. minuta*, Kirsch; also *P. cruciata*, Kirsch, from Colombia.

† Not 3–10, as stated by Lacordaire.

also) in many species appears at first sight to be coarsely punctured, but when viewed under a strong lens these "punctures" prove to be raised granules, in the centre of each of which is a very minute impression, each of these bearing a hair: for convenience, this form of sculpture is here termed granulate-punctate. The form of the fifth ventral segment in the males, as already noted, often affords a good character for the separation of closely allied species, this reaching its maximum in *P. caudata*, *P. denticulata*, and *P. montana*.

These insects are found upon bushes, especially in damp places, both in the low country and in the mountains, up to an elevation of 8000 feet, and representatives of the genus were obtained in most of the localities visited by me in Central America.

The following key is added to assist in the identification of the numerous species; the position, however, of those of which the females only are known is doubtful:—

*a*. Tarsal claws with a rectangular or acute tooth in both sexes.
  *a'*. Scutellum with a deep notch in front and a narrow well-defined median sulcus *.
    *a''*. Body almost glabrous, very shining.
      *a'''*. Elytra confusedly punctured, with a distinct sutural stria, this being more or less deeply impressed at the base . . . . . Species 1–4.
      *b'''*. Elytra punctate-striate . . . . . Species 5.
      *c'''*. Elytra obsoletely striate . . . . . Species 6.
    *b''*. Body pubescent.
      *d'''*. Body convex; elytra confusedly punctured.
        *a*⁴. Prothorax gibbous in front; humeri of the elytra acute . . . . . Species 7.
        *b*⁴. Prothorax convex in front . . . . . Species 8, 9.
      *e'''*. Body rather depressed.
        *c*⁴. Elytra not or obsoletely striate . . . . . Species 10, 11.
        *d*⁴. Elytra striate . . . . . Species 12.
        *e*⁴. Elytra punctate-striate . . . . . Species 13.
*b'*. Scutellum concave, with a deep notch in front; body pubescent . . . . Species 14.
*c'*. Scutellum with a deep notch in front †, and usually more or less sulcate down the middle anteriorly.
  *c''*. Body almost glabrous; elytra confusedly punctured, with a short deep sutural stria . . . . . Species 15.
  *d''*. Body pubescent.
    *f'''*. Antennæ with joints 3 and 4 long, 3 not or very little shorter than 4.
      *f*⁴. Elytra not or obsoletely seriate-punctate . . . . . Species 16, 17.
      *g*⁴. Elytra punctate-striate or seriate-punctate.
        *a*⁵. Body convex or moderately convex . . . . . Species 18–23‡.
        *b*⁵. Body rather depressed . . . . . Species 24.
    *g'''*. Antennæ with joint 3 very much shorter than 4 . . . . . Species 25, 26.

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* Except in some specimens of *P. cucullata*.

† Shallower in some of the small species.

‡ The North-American *P. serricollis* (Say) belongs to this section.

*d'*. Scutellum with a shallow notch in front; upper surface of the body more or less shining . . . . . Species 27–29.

*e'*. Scutellum with a shallow notch in front, usually with a smooth, slightly impressed, median line; upper surface of the body opaque or dull, rugulose, thickly pubescent . . . . . Species 30–32.

*f'*. Scutellum without trace of emargination in front, flat.

*e''*. Elytra punctate-striate . . . . . Species 33.

*f''*. Elytra not or obsoletely striate . . . . . Species 34, 35.

*b*. Tarsal claws with a rectangular or acute tooth in the female, the dilated portion usually longer and always ending in a curved tooth in the male, this tooth in some species (at least on the anterior tarsi) extending nearly as far as the claw itself; body pubescent.

*g'*. Antennæ with joint 3 not or a very little shorter than 4 *.

*g''*. Prothorax transversely subquadrate, greatly explanate at the sides, wider than the base of the elytra; scutellum with a shallow notch in front: elytra confusedly punctured, the humeri raised and acute . . . . . Species 36.

*h''*. Prothorax much narrowed anteriorly, angularly dilated at the sides before the base; scutellum with a moderately deep notch in front; elytra punctate-striate . . . . . Species 37.

*i''*. Prothorax much narrowed anteriorly, without angular dilatation at the sides.

*h'''*. Scutellum with a deep notch in front, and broadly and deeply sulcate down the middle; elytra obsoletely seriate-punctate . . . . . Species 38.

*i'''*. Scutellum with a deep notch in front and also narrowly sulcate down the middle to near the apex; elytra with the humeri subrectangular, the surface not or obsoletely striate . . . . . Species 39.

*j'''*. Scutellum with a deep or moderately deep notch in front; elytra with the humeri more or less rounded, the surface seriate-punctate or punctate-striate †.

*h*⁴. Elytra broadly caudate in the male . . . . . Species 40.

*i*⁴. Elytra not caudate in the male.

*c*⁵. Prothorax with the basal margin more or less denticulate; scutellum with a deep or moderately deep notch in front.

*a*⁶. Antennæ slender, with long rami in the male . . . . . Species 41–50‡.

*b*⁶. Antennæ stout, with shorter rami in the male: species small . Species 51.

*d*⁵. Prothorax with the basal margin smooth, or obsoletely denticulate towards the sides only; scutellum with a shallow notch in front.

*c*⁶. Antennæ slender, with long rami in the male . . . . . Species 52–55.

*d*⁶. Antennæ stout, with shorter rami in the male . . . . . Species 56, 57.

*h'*. Antennæ with joint 3 considerably shorter than 4; prothorax subconical; scutellum with a shallow notch in front . . . . . Species 58.

*c*. Tarsal claws longer, with a short angular tooth at the base; scutellum with a deep notch in front; body thickly pubescent. [♂ unknown.] . . . . . Species 59.

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* Shorter in some males of *P. forcipata*.

† Except in some specimens of *P. mexicana*, *P. opima*, &c.

‡ *P. angustata*, Horn, from Florida, probably belongs to this section.

### 1. **Ptilodactyla rufa.** (Tab. XXVII. figg. 13, ♂; 13 *a*, antenna.)

Rather short, elliptic, convex, very shining, glabrous above, very sparsely and finely pubescent beneath; rufous or rufo-testaceous, the antennæ testaceous, with joints 5–10, 6–10, or 7–10 black, the tenth sometimes testaceous at the tip, the eyes black, the terminal joints of the palpi more or less infuscate, the legs testaceous; the entire upper surface rather sparsely, minutely punctate, the under surface also sparsely, but more coarsely punctate. Head broad, the eyes moderately large; antennæ—(♂) nearly as long as the body, with joints 3–10 subequal in length, 4–10 each with a moderately long ramus, the rami increasing in length outwards, the outer three longer than the joints themselves—(♀) gradually widening and becoming more strongly serrate from the fourth joint, 3 and 4 elongate, 5–11 decreasing in length, 3 slender, 7–10 wide and acutely serrate. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and converging almost from the base; the base trisinuate, denticulate, and with a short projecting tooth in the centre; the hind angles acute and directed backwards. Scutellum deeply notched in the centre in front, and with a narrow median sulcus extending thence to near the apex. Elytra rather short, rounded and acutely margined at the sides, wider than the prothorax, with a punctured and somewhat deeply impressed sutural stria extending from the base almost to the apex.

Length $4\frac{1}{2}$–$5\frac{1}{2}$, breadth $2\frac{1}{2}$–$3\frac{1}{10}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, San Isidro and Zapote (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui, David, Caldera (*Champion*).

Found in plenty in Chiriqui, and sparingly in Guatemala, on the Pacific slope. This is one of several allied Central-American forms, amongst which it may be known by its convex, ferruginous, very shining body, glabrous upper surface, &c. The antennæ have from four to six of the outer joints black, the terminal one, and sometimes the apex of the tenth also, as well as those at the base, being testaceous.

### 2. **Ptilodactyla maculata.** (Tab. XXVII. fig. 15, ♂, var.)

Rather short, elliptic, convex, very shining, glabrous above, very sparsely pubescent beneath; testaceous, the elytra usually with the base, a transverse patch on the middle of the disc of each, and, rarely, the apex or suture, infuscate or black, these markings sometimes partly or entirely obliterated, and sometimes largely extended, the elytra being entirely black in one example; the antennæ also variable in colour—in some specimens black, with the basal three or four joints and the tip testaceous, in others testaceous, with joints 8–10 only black; the entire upper surface rather sparsely, finely punctate, the punctures on the prothorax sometimes coarser than those on the elytra, the under surface also sparsely punctate. Head broad, the eyes moderately large; antennæ—(♂) rather slender, not so long as the body, joints 4–10 each with a moderately long ramus—(♀) gradually widening and becoming more distinctly serrate from the fourth joint. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and converging almost from the base; the base trisinuate, denticulate, and with a projecting tooth in the centre; the hind angles acute and directed backwards. Scutellum deeply notched in the centre in front, and with a narrow median sulcus extending thence to near the apex. Elytra rather short, wider than the prothorax, rounded and acutely margined at the sides, more parallel in some specimens, and with a punctured more or less distinct sutural stria extending from the base almost to the apex.

Length $3\frac{3}{4}$–$4\frac{1}{2}$, breadth $2\frac{1}{10}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Cubilguitz, Sinanja, and San Juan in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Numerous examples. Closely allied to *P. rufa*, the immaculate variety being very like that species, but differing from it in the more slender antennæ in both sexes and also

in its smaller size. The colour of the elytra is very variable. In one male from Bugaba (fig. 15) the basal fascia is so much extended as to nearly reach the median patch, and the apex also is black; and in another specimen from the same locality the elytra are entirely black. The antennæ, too, as in *P. rufa*, also vary greatly in colour. Some specimens are more parallel than others, irrespective of sex. In one of the Chiriqui males the thorax is much more distinctly punctured than usual.

### 3. **Ptilodactyla nigricornis.**

Rather short, oblong-elliptic, convex, very shining; head, prothorax, and under surface very sparsely and finely pubescent, the rest of the surface apparently glabrous; rufous or brownish-rufous, the antennæ black, with the two basal joints rufo-testaceous, the legs ferrugineo-testaceous; the entire upper surface rather sparsely, minutely punctate, the punctures on the prothorax excessively minute, the under surface also sparsely punctate. Head broad, the eyes moderately large; antennæ—(♂) as long as the body, with the joints from the third subequal in length, 4–10 each with a moderately long ramus—(♀) gradually widening and becoming more strongly serrate from the fourth joint, 3 and 4 elongate, 5–11 decreasing in length. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and converging almost from the base; the base trisinuate, denticulate, and with a projecting tooth in the centre; the hind angles acute and directed backwards. Scutellum deeply notched in the centre in front, and with a narrow median sulcus extending thence to the apex. Elytra moderately long, wider than the prothorax, acutely margined at the sides, and subparallel from a little below the shoulders to about the middle, with a shallow, punctured sutural stria not extending to the apex.

Length $4\frac{4}{5}$–$5\frac{1}{4}$, breadth $2\frac{1}{3}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, Sinanja in Vera Paz (*Champion*).

One male and four females. More elongate and more parallel than *P. rufa*, the antennæ entirely black, the two basal joints excepted, the thorax distinctly pubescent (even in rubbed examples), the antennæ more elongate in both sexes.

### 4. **Ptilodactyla ebenina.**

Elliptic, short, convex, very shining; almost glabrous, the head, prothorax, and under surface very sparsely and finely pubescent in fresh examples; black or pitchy-black, the antennæ black or piceous, the legs piceous or brown, the tarsi testaceous; the upper surface somewhat thickly, minutely punctate, the punctures on the prothorax often a little closer and coarser than those on the elytra, the metasternum sparsely, the rest of the under surface closely, punctured. Head broad, the eyes moderately large; antennæ—(♂) about as long as the body, rather slender, joints 4–10 each with a comparatively short ramus—(♀) gradually becoming more distinctly serrate from the fourth joint. Prothorax short, transversely convex in front, narrowly margined at the sides, the latter rounded from the middle forwards, and subparallel or slightly constricted behind, the hind angles acute; the base trisinuate, denticulate at the sides and in the middle, and with a projecting tooth in the centre. Scutellum smooth, deeply notched in the middle in front and with a narrow median sulcus extending thence to the apex. Elytra short, a little wider than the prothorax, subparallel to near the middle, narrowly margined at the sides, and with a very short sutural stria at the base, the humeri somewhat rounded.

Length $2\frac{2}{3}$–3, breadth $1\frac{1}{4}$–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Toxpam, Cordova (*Sallé*); GUATEMALA, Sinanja and San Juan in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Many specimens, the insect being apparently not uncommon on the Atlantic slope of Southern Mexico and Guatemala and in Chiriqui. Easily recognizable by its small

size, black colour, very shining and almost glabrous surface, and short thorax. The legs vary in colour. The elytra are confusedly punctured, without trace of striæ, a short sutural one at the base excepted. The pubescence is easily abraded, and only visible on the thorax in fresh specimens, that on the under surface being more distinct. *P. ebenina* is much smaller than *P. corvina*, and has very much shorter and more slender antennæ, the thorax and elytra more narrowly margined, the scutellum with a narrow, well-defined median sulcus, &c.

### 5. **Ptilodactyla glabrata.**

♀. Moderately long, elliptic, rather broad, convex, shining, almost glabrous; testaceous-brown, the antennæ testaceous, with the eighth and ninth joints slightly infuscate, the eyes black, the legs testaceous. Head broad, sparsely, finely punctate, the eyes prominent and moderately large; antennæ rather slender, about as long as the elytra, the joints from the fourth very gradually widening and becoming more distinctly serrate, 3 elongate, 4–10 slightly shorter and subequal in length. Prothorax short, transversely convex in front, explanate at the sides behind and compressed laterally towards the apex, the latter appearing subtruncate as viewed from above, the sides acutely margined and arcuately converging almost from the base; the base trisinuate, denticulate; the hind angles acute and directed backwards; the surface sparsely, extremely minutely punctate. Scutellum deeply notched in the centre in front and with a shallow median sulcus extending thence to near the apex. Elytra moderately elongate, a little rounded at the sides, widest at the middle, acutely margined at the sides; rather coarsely punctate-striate, the punctures becoming coarser towards the sides, the first (sutural) and fifth (humeral), however, very deeply impressed at the base; the interstices feebly convex, flat at the apex, and sparsely, minutely punctate.

Length $6\frac{1}{8}$, breadth 3 millim.

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*).

One example. Larger, longer, and less parallel than *P. nigricornis*, the thorax compressed laterally in front, the antennæ pale (the eight and ninth joints excepted), the elytra punctate-striate, &c. There are traces of fine pubescence on the thorax.

### 6. **Ptilodactyla substriata.** (Tab. XXVII. figg. 16, ♂; 16 *a*, antenna.)

♂. Oblong-elliptic, flattened above, very shining; above almost glabrous, beneath sparsely and finely pubescent; black or pitchy-black, the antennæ piceous, becoming brownish towards the tip, the apical joint testaceous, the femora and tarsi testaceous, the tibiæ brownish. Head sparsely, finely punctate, the eyes moderately large; antennæ stout, not so long as the body, the joints from the fourth slightly rounded on their outer edge, 4–10 each with a comparatively short ramus, the outer rami very little longer than the joints themselves, the eleventh joint stout. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and converging from a little before the base, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface extremely minutely, very sparsely punctate. Scutellum distinctly punctured, very deeply notched in the middle in front, and with a deep sulcus extending thence to the apex. Elytra moderately long, feebly rounded and sharply margined at the sides, widest at the middle, flattened on the disc, the latter broadly transversely depressed at about one-fourth from the base; finely, rather sparsely punctate, the disc with indications of obsolete impunctate striæ, the first and fifth deeply impressed at the base. Beneath sparsely and more coarsely punctured than above, the ventral segments somewhat closely punctate. Fifth ventral segment arcuate-emarginate at the apex.

Length $4\frac{1}{10}$–$4\frac{1}{8}$, breadth 2 millim.

*Hab.* Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*).

Two males. Easily separable from its allies by the depressed, obsoletely striate disc of the elytra. The antennæ are rather stout, with shorter rami than in the males of *P. nigricornis*, *P. rufa*, &c.; the apical joint is unusually stout.

## 7. Ptilodactyla gibbicollis.

♂. Elliptic, short, convex, very shining; somewhat thickly clothed with very short, fine, ashy pubescence, the elytra with sparser and darker pubescence; black, the antennæ and legs piceous, the tarsi obscure testaceous; the upper and under surfaces somewhat thickly and very finely, the head and the flanks of the prothorax more densely, punctate. Head very broad, the eyes comparatively small; antennæ slender, fully as long as the body, joints 4–10 each with a long slender ramus, the outer rami very much longer than the joints themselves. Prothorax moderately transverse, compressed at the sides anteriorly, strongly gibbous in front, the apex acutely margined in the centre, the sides somewhat obliquely converging from the base, rounded anteriorly, and acutely margined from the base to a little beyond the middle, the hind angles acute; the base bisinuate, strongly denticulate, and with three longer teeth opposite the scutellum. Scutellum rugulose, very deeply notched in the centre in front, and with a shallow median sulcus extending thence to the apex. Elytra short, of the same width as the prothorax, subparallel in their basal half and conjointly rounded at the apex, compressed laterally below the shoulders, appearing acutely margined at the sides, flattened on the disc at the base, with a short indistinct sutural stria, the humeri rectangular.

Length 3, breadth $1\frac{1}{2}$ millim.

*Hab.* Panama, Bugaba (*Champion*).

One specimen, in a bad state of preservation. Differs from all the allied forms in the gibbous, relatively long thorax. The antennæ are long and slender, with long slender rami. The base of the thorax is not arcuate-emarginate opposite the scutellum (as in *P. ebenina*, &c.), and is very distinctly denticulate throughout. The elytra are compressed at the sides below the shoulders, which are rectangular and rather prominent. The pubescence, above and beneath, is more distinct than in most of the allied species.

## 8. Ptilodactyla convexicollis.

Elliptic, short, convex, shining; above and beneath somewhat thickly clothed with very short, fine, appressed, yellowish-cinereous pubescence; reddish-brown or rufo-testaceous, the antennæ testaceous, with joints 6–9 or 7–9 usually infuscate, the eyes black, the legs testaceous, with the tibiæ often darker; the upper surface thickly, very finely punctate, the under surface more coarsely punctured. Head broad, the eyes large and somewhat prominent; antennæ rather slender, nearly as long as the body, joints 4–10 each with a short ramus in the male and gradually becoming more distinctly serrate in the female. Prothorax short, transversely convex in front, widest a little before the base, the sides rounded, converging anteriorly, and sharply margined, subparallel behind, the hind angles acute; the base trisinuate, finely denticulate, and with a short projecting tooth in the centre. Scutellum deeply notched in the centre in front and with a narrow well-defined median sulcus extending thence to the apex. Elytra short, wider than the prothorax, subparallel in their basal half, narrowly margined, rather sharply produced at the apex, and with a short sutural stria at the base. Fifth ventral segment arcuate-emarginate at the apex in the male. Tarsal claws with a rectangular tooth in both sexes.

Length $3\frac{1}{2}$–$4\frac{1}{2}$, breadth $1\frac{2}{3}$–2 millim. (♂ ♀.)

*Hab.* Mexico, Cordova (*Sallé*), Teapa in Tabasco (*Sallé*, *Höge*, *H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Guatemala, San Juan and Cubilguitz in Vera Paz, Cerro Zunil (*Champion*).

Sixteen specimens, all but one from the Atlantic slope. This little species is allied to *P. ebenina*, but it is larger and broader, and reddish-brown or rufo-testaceous in colour; the upper surface is more closely punctured, and somewhat thickly clothed with short pruinose pubescence; and the antennæ are testaceous, with from two to five of the intermediate joints more or less infuscate in both sexes. One of the specimens in the Sallé collection is labelled with the MS. name *Ptilodactyla convexicollis*, Chevr. The single example, a large female, from Cerro Zunil has the antennæ entirely testaceous.

### 9. **Ptilodactyla cucullata.**

♀. Elliptic, short, convex, shining, clothed with short fine brownish-cinereous pubescence; black, the antennæ black or brown, the legs piceous with the tarsi testaceous, or entirely testaceous; the upper surface very finely, somewhat thickly punctate, the under surface more coarsely punctured. Head broad, the eyes rather small; antennæ reaching to a little beyond the middle of the elytra, rather slender, the joints from the fourth serrate. Prothorax short, broad, transversely convex in front, acutely margined at the sides and apex, abruptly compressed at the sides anteriorly, widest before the base, the sides rounded and somewhat explanate, converging in front, the hind angles acute; the base trisinuate, feebly denticulate, and with a short projecting tooth in the centre. Scutellum with a deep notch in the centre in front, and usually with a narrow shallow median sulcus. Elytra short, at the base not wider than the base of the prothorax, broadly and acutely margined at the sides, compressed laterally below the humeri, subparallel to about the middle, and a little produced at the apex, with a short, very deeply impressed, sutural stria at the base.

Length 3–3$\frac{1}{3}$, breadth 1$\frac{1}{2}$–1$\frac{3}{4}$ millim.

*Hab.* Mexico, Teapa in Tabasco (*Sallé, H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Guatemala, Zapote (*Champion*); Honduras (*Sallé*).

Five specimens, all females. This species approaches *P. convexicollis*; but differs from it, apart from its smaller size and black colour, in having the thorax more acutely margined at the apex and strongly compressed at the sides anteriorly, the scutellum with the median sulcus shallow or obsolete, &c. The more pubescent body, the prominent anterior margin of the thorax, the rugulose and less deeply notched scutellum, the deeply impressed short sutural stria, &c., distinguish it from *P. ebenina*, which it resembles in size and colour. The specimen in the Sallé collection is labelled with the MS. name *Ptilodactyla cucullata*, Chevr.

### 10. **Ptilodactyla canaliculata.**

Oblong-elliptic (♂), oblong-oboval (♀), narrow, flattened above, moderately shining, thickly clothed with short fine pallid pubescence; rufo-piceous, the base and suture of the elytra more or less ferruginous, the eyes black, the antennæ, palpi, and legs testaceous. Head densely punctured, the eyes large and prominent in the male, smaller in the female; antennæ long and rather slender, the joints 4–10 each with a short ramus in the male and serrate in the female. Prothorax short, transversely convex in front, acutely margined and rounded at the sides, widest before the base and narrowed anteriorly, the hind angles acute; the base trisinuate, feebly denticulate, and with a short projecting tooth in the centre; the surface closely and rather coarsely granulate-punctate in the male, the punctuation more diffuse in the female. Scutellum rugulose, deeply notched in the centre in front, and with a well-defined median sulcus extending thence to the apex. Elytra moderately long and considerably wider than the prothorax in the female, shorter and narrower in the male, depressed on the disc below the base, acutely margined at the sides, the humeri

rather sharp; the surface thickly, very finely punctate, and in one specimen also obsoletely seriate-punctate on the disc. Fifth ventral segment rather deeply emarginate at the apex in the male.
Length 3–4¼, breadth 1⅖–1 9/10 millim. (♂ ♀.)

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Cerro Zunil (*Champion*).

Four males from Teapa and a female from Cerro Zunil. Narrower and flatter than *P. convexicollis*, the thorax thickly and rather coarsely granulate-punctate, the antennæ entirely testaceous. The female is much larger than the males, it also having the thorax more sparsely punctate and the elytra obsoletely seriate-punctate on the disc. *P. angusta*, Kirsch, from Peru, is an allied form, but it is relatively longer, flatter, and more parallel, and has distinct rows of punctures on the elytra.

## 11. **Ptilodactyla deplanata.**

♀. Moderately long, flattened above, shining, sparsely and finely pubescent, piceous, the antennæ black, the legs brownish; the upper surface sparsely, minutely punctate, the punctures on the prothorax very minute. Head broad, the eyes rather small; antennæ stout, reaching to beyond the middle of the elytra, the joints from the fourth triangularly dilated. Prothorax short, broad, transversely convex in front, rounded at the sides and narrowed from a little before the base, the hind angles acute; the base trisinuate and feebly denticulate. Scutellum notched in the centre in front and with a median sulcus extending thence to near the apex. Elytra moderately long, flattened on the disc and also transversely depressed below the base, of the same width as the prothorax in front, widest a little beyond the middle, broadly and acutely margined at the sides, with indications of faint striæ on the disc towards the suture.
Length 4–4¼, breadth 1⅞–2 millim.

*Hab.* PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

Two females. This insect resembles the female of *P. canaliculata*, but differs from it in the stout, black antennæ, the broader and smoother thorax, &c. The antennal joints 4–10 are broadly triangularly dilated.

## 12. **Ptilodactyla fuscicornis.**

Oblong-elliptic, narrow, flattened above, shining, thickly clothed with pallid pubescence; nigro-piceous or rufo-piceous, the antennæ black or piceous, with the two basal joints reddish, the legs and palpi testaceous. Head rugulosely punctured, the eyes comparatively small in both sexes; antennæ moderately long, slender, the joints 4–10 each with a short ramus in the male and serrate in the female. Prothorax short, convex in front, the sides subparallel or slightly sinuate behind and arcuately converging from about the middle forwards, the hind angles acute; the base trisinuate, finely denticulate, and with a short projecting tooth in the centre; the surface thickly, finely punctate. Scutellum closely punctured, notched in the centre in front, and with a narrow well-defined median sulcus extending thence almost or quite to the apex. Elytra moderately long, wider than the prothorax, broadly margined and slightly rounded at the sides, the humeri rounded; shallowly striate, the interstices rugulosely punctured.
Length 3⅔–4, breadth 1½–1⅔ millim. (♂ ♀.)

*Hab.* GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

One pair. This insect resembles the Costa Rican *P. substriata*; but it is narrower and not so shining, the upper surface is more closely punctured and pubescent, the scutellar groove is shallower and narrower, the legs are more slender and entirely

testaceous, &c. From *P. gracilis* it may be known by its narrower, less parallel form, the pale slender legs, the shorter antennæ, which have much shorter rami in the male, &c.

### 13. **Ptilodactyla obovata.**

♀. Oboval, short, moderately convex, rather dull, the elytra shining, thickly clothed with short pallid pubescence; rufo-fuscous, the antennæ and legs testaceous. Head densely, rugulosely punctate, the eyes rather small; antennæ long and slender, feebly serrate. Prothorax short, moderately convex in front, rounded at the sides, the latter rapidly converging from about the basal third forwards, the hind angles acute; the base trisinuate, obsoletely denticulate at the sides, with a short projecting tooth in the centre; the surface densely granulate-punctate. Scutellum rugulose, deeply notched in front, and with a narrow median groove extending thence to near the apex. Elytra wider than the prothorax, narrowly margined and a little rounded at the sides, the apices sharp and slightly produced, the humeri rounded; punctate-striate, the interstices rugulosely punctured.

Length 4, breadth 2 millim.

*Hab.* Mexico, Jalapa (*Höge*).

Two specimens. An obscure little species, apparently not very closely allied to any of those described here, and chiefly distinguishable by its obovate shape, canaliculate scutellum, and densely punctured thorax.

### 14. **Ptilodactyla brevicollis.** (Tab. XXVII. fig. 17, ♀.)

♀. Oval, narrow, flattened above, shining, thickly clothed with rather long fine pallid pubescence; fusco-testaceous, the eyes black, the antennæ and legs testaceous. Head very finely punctate, the eyes moderately large; antennæ long and slender, feebly serrate, joints 3 and 4 equal in length. Prothorax very short, moderately convex in front, sharply margined and distinctly explanate at the sides behind, the sides rounded and converging from about the basal third forwards; the base trisinuate, almost smooth, with a projecting tooth in the centre; the surface very finely, rather sparsely punctate, and transversely depressed on the disc before the base. Scutellum concave, deeply notched in the centre in front, almost smooth. Elytra elongate, rounded and acutely margined at the sides, narrowing from about the middle, shallowly punctate-striate, the punctures of the striæ becoming coarse and deep at the sides, the interstices thickly, rugulosely punctate.

Length 4, breadth $1\frac{4}{5}$ millim.

*Hab.* Mexico, Toxpam (*Sallé*).

One example. Easily distinguishable by the deeply notched, concave scutellum. The insect is oval in shape, with a very short, comparatively smooth thorax, the sides of which are rounded and distinctly explanate. The scutellum is so broadly hollowed down the middle as to appear concave. *P. brevicollis* somewhat resembles *P. marginata*, but it is narrower, and has a much more transverse thorax, punctate-striate elytra, &c.

### 15. **Ptilodactyla corvina.** (Tab. XXVII. fig. 21, ♂, var.)

♂. Rather short, elliptic, convex, very shining; head, prothorax, and under surface very sparsely and finely pubescent, the rest of the surface apparently glabrous; black, the head and prothorax sometimes of a more piceous tint, the under surface partly piceous, the antennæ black, with the basal joint often reddish, the legs piceous or brownish, with the femora paler; the upper surface sparsely and minutely,

the under surface more coarsely, punctate. Head broad, the eyes large; antennæ as long as the body, stout, the joints 4–10 each with a moderately long and stout ramus, 3 a good deal stouter than 4. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and converging from a little before the base, parallel behind; the base trisinuate, denticulate; the hind angles acute and directed backwards. Scutellum with a very deep notch in the centre in front and also deeply sulcate anteriorly. Elytra rather short, feebly rounded at the sides, with a deeply impressed sutural stria at the base only, the apices conjointly rounded. Fifth ventral segment arcuate-emarginate at the apex.

*Var.* The head in front and the prothorax rufous. (Fig. 21.)

Length 4–4½, breadth 2–2¼ millim.

*Hab.* MEXICO, Orizaba and Toxpam (*Sallé*).

Four examples, including one of the variety, all males. This insect approaches *P. nigricornis*; but it is differently coloured, the scutellum is still more deeply sulcate anteriorly (instead of having a sharply defined, narrow, median sulcus, as in *P. nigricornis* and its allies), the thorax is more parallel behind, the sutural stria of the elytra is very short, &c. It is much larger than *P. ebenina*.

### 16. **Ptilodactyla marginata.**

Oval, somewhat flattened above, shining, thickly and finely pubescent; varying in colour from pitchy-black or piceous with the sides of the prothorax and the suture and sides of the elytra obscure ferruginous to entirely rufo-testaceous, the elytra usually with a paler humeral patch, the antennæ fuscous or obscure testaceous, the legs testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a ramus in the male and serrate in the female. Prothorax short and broad, transversely convex in front, sharply margined at the sides, the latter rounded and converging from about the middle forwards; the base trisinuate, obsoletely denticulate, and with a short projecting tooth in the centre; the surface very finely, somewhat thickly punctate. Scutellum sparsely punctured, deeply notched in the centre in front. Elytra rather short, widest at about one-fourth from the base and there very much wider than the prothorax, the sides rounded and broadly and acutely margined, the apices somewhat produced; thickly, very finely punctate, in one specimen obsoletely seriate-punctate on the disc, and with a row of coarse punctures within the margin, and usually a row of fine punctures along the suture. Fifth ventral segment rather deeply emarginate at the apex in the male.

Length 3⅘–4½, breadth 2–2¼ millim. (♂ ♀.)

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*), Tapachula in Chiapas (*Höge*); GUATEMALA, Zapote (*Champion*).

Found in some numbers at Teapa, single elsewhere. This small species may be chiefly known by its broadly and acutely margined, confusedly punctured elytra, and very finely punctured thorax. It is more oval in shape and more depressed than *P. convexicollis*, from which it also differs in the non-canaliculate scutellum, the colour of the antennæ, &c.

### 17. **Ptilodactyla chiriquensis.**

Elliptic, moderately convex, flattened above, shining, thickly clothed with rather long pallid pubescence; piceous or fusco-ferruginous, the base of the prothorax, the scutellum, and suture reddish in dark specimens, the antennæ fusco-testaceous, the legs testaceous. Head rugulosely punctured, the eyes moderately large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and feebly serrate in the female. Prothorax short, convex in front, sharply margined at the sides, the sides gradually converging from the base and rounded anteriorly, the hind angles acute; the base

trisinuate, almost smooth; the surface finely and somewhat thickly granulate-punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra rather short, a little wider than the prothorax, sharply margined at the sides; thickly, finely punctate, with indications of obsolete striæ or rows of coarser punctures on the disc, and with a row of coarse punctures within the margin. Fifth ventral segment rather deeply subtriangularly emarginate in the male.

Length 3–4, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* PANAMA, Volcan de Chiriqui 2500–4000 feet (*Champion*).

Five specimens, all in a bad state of preservation. A very obscure species, perhaps nearest allied to *P. marginata*, from which it differs in its smaller size, the finely granulate-punctate thorax, and the more parallel and more narrowly margined elytra. *P. chiriquensis* is also very like *P. marcida*, but has less distinctly striate elytra, a more deeply notched scutellum, and differently formed claws in the male.

### 18. **Ptilodactyla convexa.**

Elliptic, rather short, convex, thickly clothed with short brownish pubescence; pitchy-black, piceous, reddish-brown, or ferruginous, the antennæ and legs brownish or testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, broad, transversely convex in front, sharply margined at the sides, the sides rapidly converging from the basal third forwards and subparallel behind, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface somewhat thickly granulate-punctate. Scutellum thickly punctured, very deeply notched in front and with a broad deep median groove extending thence to near the apex. Elytra rather short, wider than the prothorax, broadly and acutely margined at the sides, the humeri rounded; seriate-punctate to near the apex, the interstices flat and rugulosely punctate. Fifth ventral segment arcuate-emarginate at the apex in the male. Tarsal claws with an acute tooth in both sexes.

Length 5–$5\frac{2}{3}$, breadth $2\frac{1}{2}$–$2\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* MEXICO (*Sallé*), Jalapa (*Höge*), Teapa in Tabasco (*H. H. Smith*); NICARAGUA, Chontales (*Belt*).

Sent in numbers by Herr Höge. A moderately large, convex species, with very deeply notched and grooved scutellum, the claws similar in both sexes. It resembles *P. sulcata*, but is smaller and less elongate, and has the thorax less narrowed in front and more parallel behind. The following is a more nearly allied form.

### 19. **Ptilodactyla confinis.**

Elliptic, rather convex, somewhat flattened above, thickly clothed with short brownish pubescence; piceous or reddish-brown, the antennæ and legs brownish or testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a slender ramus in the male and serrate in the female. Prothorax short, transversely convex in front, sharply margined at the sides, the sides rounded and narrowing from a little before the base to the apex, the hind angles acute; the base trisinuate, finely denticulate, and with a projecting tooth in the centre; the surface somewhat thickly granulate-punctate. Scutellum thickly punctured, deeply notched in the centre in front. Elytra rather short, wider than the prothorax, acutely margined at the sides, somewhat pointed behind, the humeri rounded; shallowly punctate-striate to near the apex, the interstices flat and rugulosely punctate. Fifth ventral segment subtriangularly emarginate at the apex in the male. Tarsal claws rectangularly dilated in both sexes.

Length $4\frac{3}{4}$–$6\frac{1}{2}$, breadth $2\frac{1}{3}$–3 millim. (♂ ♀.)

*Hab.* Mexico (*Höge*), Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*); British Honduras, Belize (*Blancaneaux*); Guatemala, San Juan in Vera Paz, Zapote (*Champion*), Guatemala city (*Salvin*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui (*Champion*).

*Var.*? ♀. The prothorax densely granulate-punctate, the elytra also granulate towards the base.

*Hab.* Mexico, Jalapa, Tapachula (*Höge*); Guatemala, Capetillo, Zapote (*Champion*).

Very like *P. convexa*, but less convex and usually narrower and a little more elongate, with the scutellum not so deeply notched in the centre in front. In some specimens the seriate punctures on the elytra are very distinct and placed in shallow striæ. The thorax is narrowed almost from the base. Both sexes were found at Teapa, Chontales, and Belize, females only elsewhere. The specimens treated as a variety, all females, differing considerably *inter se*, appear to belong to an extreme form of the same species; the two examples from Jalapa are more elongate than the others. *P. confinis* is nearly allied to the North-American *P. serricollis* (Say); but it is less parallel, the scutellar notch is deeper, the elytra are more obliquely narrowed behind, and the fifth ventral segment in the male is less deeply emarginate.

### 20. **Ptilodactyla guatemalensis.**

Moderately elongate, broad, robust, shining, thickly clothed with brownish pubescence, piceous, the antennæ and legs testaceous or obscure testaceous. Head rugulosely punctured, the eyes large; antennæ very long and slender, the joints 4–10 each with a long ramus in the male, the outer rami about one-half longer than the joints themselves, and acutely serrate in the female. Prothorax short, transversely convex and greatly narrowed in front, the sides acutely margined and slightly explanate behind, the sides rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, denticulate, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum closely, rugulosely punctate, notched in the centre in front. Elytra moderately long, much wider than the prothorax, sharply margined at the sides, subparallel in their basal half in the male, a little rounded at the sides in the female, the apices sharp, the humeri rounded; obsoletely punctate-striate, the interstices closely, rugulosely punctate. Fifth ventral segment deeply emarginate at the apex in the male. Tarsal claws acutely rectangularly dilated in both sexes.

Length 7–7$\frac{1}{4}$, breadth 3$\frac{1}{8}$–3$\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Guatemala, San Gerónimo, Capetillo, Zapote (*Champion*).

Two males and one female. Very like *P. mexicana* and its allies, but differing from them in the form of the tarsal claws in the male, the dilated portion not being produced into a rather long curved tooth in this sex. This character brings the present species near *P. confinis* and *P. convexa*, from which its larger size, broader and more robust form, and less deeply notched scutellum will serve to distinguish it.

### 21. **Ptilodactyla submaculata.**

Elliptic, narrow, moderately convex, shining, thickly clothed with rather long pallid pubescence; rufo-testaceous, the elytra testaceous, usually with a subtriangular or oblong patch at the sides about the

middle extending downwards, and a large common subtriangular patch below the scutellum infuscate or piceous, the eyes black, the antennæ and legs testaceous. Head rugulosely punctured, the eyes large and prominent in the male, smaller in the female; antennæ slender, moderately long, the joints 4–10 each with a comparatively short ramus in the male and feebly serrate in the female, joint 3 slightly shorter than 4. Prothorax short, convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, feebly denticulate, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulosely punctured, with a deep notch in the centre in front. Elytra rather short, sharply margined and distinctly rounded at the sides, widest at the middle and there a good deal wider than the prothorax, the apices sharp, the humeri rounded; punctate-striate to near the apex, the interstices thickly punctured. Fifth ventral segment feebly emarginate in the male. Tarsal claws rectangularly dilated in both sexes.

Length $3\frac{1}{3}$–$3\frac{3}{4}$, breadth $1\frac{1}{2}$–$1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* British Honduras, R. Hondo (*Blancaneaux*); Nicaragua, Chontales (*Janson*).

One male and five females from the Rio Hondo and a female from Chontales. This small species somewhat resembles *P. deleta*, but it is smaller, shorter, and more convex; the scutellum is deeply notched in front; the elytra usually have rather definite markings, and the tarsal claws are similarly formed in both sexes. The elytra in fully-coloured examples appear to have an oblique yellowish stripe extending from the shoulders downwards. *P. trinotata*, Lacord. (Gen. Col., Atlas, t. 43. fig. 2), from Brazil, is very like *P. submaculata* in size and colour, but is figured with an unemarginate scutellum.

### 22. **Ptilodactyla rufotestacea.**

♂. Oblong-elliptic, rather broad, flattened above, shining, thickly pubescent, rufo-testaceous, the eyes black, the antennæ and legs testaceous. Head closely punctured, the eyes large; antennæ very elongate, slender, the joints 4–10 each with a long ramus, the rami much longer than the joints themselves. Prothorax short, broad, greatly narrowed and moderately convex in front, sharply margined at the sides and apex, and slightly explanate at the sides behind, the sides feebly rounded and rapidly converging from the base, the hind angles sharp; the base trisinuate, obsoletely denticulate; the surface thickly punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra rather elongate, wider than the prothorax, the sides a little rounded and broadly margined, the apices sharply produced, the humeri rounded; obsoletely punctate-striate to near the apex, the interstices closely and rugulosely punctured. Fifth ventral segment somewhat broadly depressed along the middle and deeply emarginate at the apex. Tarsal claws rectangularly dilated.

Length $6\frac{3}{4}$, breadth $3\frac{1}{10}$ millim.

*Hab.* Guatemala, San Gerónimo (*Champion*).

One example. This insect is not unlike *P. pallescens*; but it has a much broader thorax and acuminate elytra, the antennal rami are much more elongate, and the tarsal claws are differently formed, the last-mentioned character bringing it near *P. tabascoana*, &c.

### 23. **Ptilodactyla tabascoana.**

Elliptic, flattened above, shining, thickly clothed with rather long yellowish-cinereous pubescence; fusco-ferruginous, the antennæ and legs testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female.

Prothorax short, moderately convex in front, sharply margined at the sides, the latter rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, denticulate, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulose, deeply notched in the centre in front. Elytra moderately long, sharply margined and a little rounded at the sides, wider than the prothorax, the humeri rounded; shallowly punctate-striate, the interstices rugulosely punctured. Fifth ventral segment in the male deeply emarginate at the apex and with a short longitudinal groove in front of the emargination. Tarsal claws rectangularly dilated in both sexes.

Length $4\frac{1}{2}$–$4\frac{2}{3}$, breadth 2 millim. (♂ ♀.)

*Hab.* MEXICO, Frontera in Tabasco (*Höge*).

Three examples. Very like *P. granulicollis*, but shorter and less parallel, the fifth ventral segment differently formed in the males, the claws similar in both sexes.

## 24. **Ptilodactyla gracilis.**

♂. Moderately long, subparallel, flattened above, shining; somewhat thickly clothed with rather long, very fine, brownish pubescence; black, the antennæ and legs black or piceous, the tarsi in great part testaceous. Head densely punctured, the eyes large; antennæ as long as the body, slender, joints 4–10 each with a slender ramus, the rami becoming longer outwards, the outer four much longer than the joints themselves. Prothorax short, transversely convex in front, acutely margined at the sides and apex, the sides rounded and converging from about the middle forwards and subparallel behind, the hind angles acute; the base trisinuate, and very feebly denticulate at the sides and in the middle; the surface closely, somewhat coarsely granulate-punctate, and feebly, transversely depressed before the base. Scutellum rugulose, deeply notched in the centre in front and also sulcate anteriorly. Elytra moderately long, flattened on the disc and also transversely depressed below the base, wider than the prothorax, subparallel in their basal half and a little produced at the apex, sharply margined; punctate-striate on the disc, the striæ not extending to the apex and becoming indistinct at the sides, the interstices flat and somewhat thickly punctured. Legs long and slender. Fifth ventral segment deeply emarginate at the apex.

Length $3\frac{3}{4}$–$4\frac{1}{4}$, breadth $1\frac{2}{3}$–$1\frac{9}{10}$ millim.

*Hab.* GUATEMALA, Cerro Zunil, Zapote, Capetillo (*Champion*).

Four examples, all males, from the Pacific slope. This small species is not very closely allied to any of the others here described, and chiefly distinguishable by its black colour, close punctuation, brownish pubescence, and long black antennæ.

## 25. **Ptilodactyla antennalis.**

♂. Oblong-elliptic, narrow, flattened above, shining, thickly clothed with rather long pallid pubescence; rufo-testaceous, the eyes black, the antennæ and legs testaceous. Head rugulosely punctured, the eyes large and prominent; antennæ long and slender, the joints 4–10 each with a rather long ramus, joint 3 very much shorter than 4. Prothorax short, convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from a little before the apex to the apex, the hind angles acute; the base trisinuate, feebly denticulate, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulosely punctured, deeply notched in the centre in front. Elytra rather short, sharply margined and a little rounded at the sides, slightly wider than the prothorax; shallowly or obsoletely punctate-striate to near the apex, the interstices thickly punctate. Fifth ventral segment feebly subtriangularly emarginate at the apex.

Length $3\frac{2}{3}$–4, breadth $1\frac{1}{2}$–$1\frac{4}{5}$ millim.

*Hab.* BRITISH HONDURAS, R. Hondo (*Blancaneaux*).

Two males. Very like *P. lutescens* and *P. submaculata*, but differing from these and nearly all the other allied forms (*P. humerosa* and *P. tenuis* excepted) in the unusually short third joint of the antennæ, this joint being about one-third shorter than the fourth.

## 26. **Ptilodactyla humerosa.**

♂. Elliptic, narrow, moderately convex, shining, thickly clothed with rather long pallid pubescence; piceous, the prothorax bordered on all sides with ferruginous, the elytra with a large humeral patch and the sides broadly and indeterminately from a little beyond the middle to the apex, and also the outer margins, testaceous, the suture and scutellum obscure ferruginous; the antennæ and legs testaceous, the eyes black. Head rugulosely punctured, the eyes large and prominent; antennæ slender, moderately long, the joints 4–10 each with a ramus, the rami increasing in length outwards, the outer ones much longer than the joints themselves, joint 3 much shorter than 4. Prothorax short, convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from about the basal third forwards, the hind angles acute; the base trisinuate, smooth, with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra rather short, acutely margined and slightly rounded at the sides, of the same width as the prothorax at the base, a little wider at the middle; shallowly punctate-striate to near the apex, the interstices thickly punctured. Fifth ventral segment feebly subtriangularly emarginate at the apex.

Length $2\frac{9}{10}$, breadth $1\frac{1}{4}$ millim.

*Hab.* Mexico, Teapa in Tabasco (*H. H. Smith*).

One example. Agrees with *P. antennalis* in the short third antennal joint, but differs from that species in its smaller size and less elongate shape, the smooth basal margin of the thorax, and also in the coloration of the elytra. The insect has also been found in plenty by Mr. Smith in the island of St. Vincent, and these specimens show very little variation. From the Peruvian *P. secedens*, Kirsch, which it resembles in colour, the present species may be known by the short third antennal joint and the granulate, posteriorly dilated thorax.

## 27. **Ptilodactyla lutescens.**

Elliptic, narrow, flattened above, shining, thickly clothed with rather long pallid pubescence; testaceous or fusco-testaceous, the elytra usually with a more or less distinct oblique paler stripe extending downwards from the shoulder to the suture, the antennæ and legs testaceous. Head rugulosely punctured, the eyes large and prominent in the male, smaller in the female; antennæ very long and slender, the joints 4–10 each with a long ramus in the male, joint 3 a little shorter than 4. Prothorax short, moderately convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from about the basal third to the apex, the hind angles acute; the base trisinuate, obsoletely denticulate at the sides; the surface thickly granulate-punctate. Scutellum rugulosely punctured, with a shallow notch in the centre in front. Elytra rather short, sharply margined and a little rounded at the sides, slightly wider than the prothorax; coarsely punctate-striate, the interstices feebly convex and thickly punctured. Fifth ventral segment shallowly arcuate-emarginate at the apex in the male.

Length 3–$3\frac{2}{3}$, breadth $1\frac{1}{5}$–$1\frac{1}{2}$ millim.

*Hab.* Mexico, Teapa in Tabasco (*Sallé, Höge, H. H. Smith*); Guatemala, San Juan in Vera Paz (*Champion*).

Seven examples. Very like *P. deleta*, but considerably smaller and with much shorter elytra. The fifth ventral segment is feebly emarginate at the apex in the male.

The very feebly notched scutellum and the less convex thorax separate it from *P. submaculata*. The single specimen in the Sallé collection is labelled with the MS. name *P. lutescens*, Chevr.

28. **Ptilodactyla montana.** (Tab. XXVII. figg. 24, ♂; 24 *a*, fifth ventral segment.)

Moderately elongate, flattened above, shining, thickly clothed with short, fine, brownish pubescence; black, piceous, or brown, the elytra with an oblique humeral patch of variable size, and sometimes a large apical patch also, testaceous or obscure testaceous—in pale specimens brown, with a common triangular piceous scutellar patch and an oblique yellowish humeral streak, the sides of the prothorax sometimes testaceous behind, the antennæ black or brown, the legs testaceous. Head rugulose, the eyes moderately large; antennæ long and stout, the joints 4–10 each with a short ramus in the male, and subtriangular and considerably dilated in the female. Prothorax very short, feebly convex in front, strongly compressed at the sides before the middle, the sides abruptly and rapidly narrowing from about the basal third forwards and subparallel or a little rounded behind; the base bisinuate, smooth; the surface closely, finely punctate, and usually with two shallow foveæ on the disc before the base. Scutellum flat, transversely cordate, densely punctured, very feebly notched in the centre in front. Elytra moderately elongate, much wider than the prothorax, parallel in their basal half, slightly depressed on the disc below the base, narrowly margined at the sides, the humeri rounded; somewhat coarsely punctate-striate to near the apex, the interstices rugulosely punctured. Fifth ventral segment in the male broadly and very deeply emarginate at the apex, the emargination extending to beyond the middle of the segment and fringed with long hairs. Tarsal claws rectangularly dilated in both sexes.

Length $3\frac{3}{4}$–$4\frac{1}{3}$, breadth $1\frac{1}{2}$–$1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 8000 feet (*Champion*).

Found in numbers in a bamboo-thicket on the slope of the Volcan de Chiriqui. This species varies a good deal in the coloration of the elytra, according to the predominance of the light or dark colour, but the humeral mark is always distinct. The scutellum is flat and strongly transverse, and very feebly notched in the centre in front. This insect is not very closely allied to any of the others described here. The form of the claws in the male distinguishes it from *P. tenuis*, &c. *P. minuta*, Kirsch, from Peru, is an allied form, but it is much less elongate.

29. **Ptilodactyla scapularis.**

♀. Oblong-elliptic, narrow, flattened above, dull, the elytra more shining; thickly clothed with very short fine, pale greyish, pruinose pubescence; black, the anterior and lateral margins of the prothorax ferruginous, the elytra with a large patch at the shoulders testaceous or flavo-testaceous and about the apical third indeterminately fusco-testaceous, this colour extending some distance forwards along the suture and along the lateral margin to the shoulders; the antennæ and legs testaceous, the femora slightly darker. Head densely, rugulosely punctate, the eyes moderately large; antennæ elongate, slender, feebly serrate. Prothorax short, transversely convex in front, the sides rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, smooth; the surface very densely punctured. Scutellum densely punctate, notched in the centre in front. Elytra moderately long, wider than the prothorax, subparallel in their basal half, slightly depressed on the disc below the base, sharply margined, the humeri rounded; finely, rugulosely punctate, with indications of obsolete striæ on the disc.

Length 3, breadth $1\frac{1}{4}$ millim.

*Hab.* Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Two examples. A very small species, resembling *P. montana* in colour; but differing from that insect in its much smaller size and less elongate shape, slender testaceous antennæ, duller surface, shorter, paler, pruinose pubescence, &c. The pubescence is sufficiently close to almost hide the dark ground-colour.

### 30. **Ptilodactyla rugulosa.** (Tab. XXVII. fig. 18, ♂.)

Elongate, flattened above, subopaque, thickly clothed with short, fine, silky, yellowish-cinereous pubescence; rufo-fuscous, the shoulders of the elytra and the front and sides of the prothorax usually reddish, the under surface obscure ferruginous or ferrugineo-testaceous, the antennæ black, with the two basal joints obscure testaceous and the apical one flavo-testaceous, the legs testaceous or obscure testaceous; the entire upper surface densely, rugulosely punctate, the under surface very finely rugulose. Head broad, the eyes large and prominent in the male, smaller in the female; antennæ very elongate, slender, the joints 4–10 each with a moderately long ramus (the rami increasing in length outwards) in the male and serrate in the female. Prothorax transverse, flattened on the disc in front, sharply margined at the sides and apex and explanate at the sides behind, the latter rapidly converging from a little before the base to the apex and rounded and slightly converging behind, the hind angles sharp; the base trisinuate and very feebly denticulate. Scutellum moderately large, feebly notched in the centre in front, and sometimes with indications of a smooth median line. Elytra elongate, distinctly wider than the prothorax, parallel in their basal half, narrowly margined at the sides, the apices slightly produced, the humeri rounded; with indications of obsolete striæ, and with a row of rather coarse punctures within the margin. Fifth ventral segment somewhat deeply emarginate at the apex in the male. Legs elongate. Tarsal claws rectangularly dilated in both sexes.

Length 7–7¾, breadth 2¾–3 millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*).

Sixteen examples. Easily distinguished by its dull, rugulose surface, and elongate, parallel shape. The anterior portion of the disc of the thorax is flattened, the sides being moderately declivous in front and explanate behind.

### 31. **Ptilodactyla varicornis.**

Moderately elongate, flattened above, opaque; thickly clothed with fine greyish pubescence, that on the disc of the elytra sometimes fuscous (leaving the suture and sides paler); brownish-black, fuscous, or brown, the lateral margins, base, and apex of the prothorax and the suture of the elytra often reddish, the antennæ black, with the two basal joints reddish and the tenth and eleventh flavo-testaceous, the legs testaceous, the tibiæ sometimes darker; the entire upper surface densely, rugulosely punctate, the under surface very finely rugulose. Head broad, the eyes large and prominent in the male, smaller in the female; antennæ moderately long, slender, the joints 4–10 each with a ramus (the outer ones slightly longer than the joints themselves) in the male and serrate in the female. Prothorax transverse, flattened on the disc in front, sharply margined at the sides and apex, and explanate at the sides behind, the latter rapidly converging from a little before the base to the apex and rounded and slightly converging behind, the hind angles sharp; the base trisinuate and very feebly denticulate. Scutellum with a shallow notch in the centre in front and indications of a smooth impressed median line. Elytra moderately long, very little wider than the widest part of the prothorax, subparallel in their basal half, narrowly margined at the sides, the apices slightly produced, the humeri rounded; obsoletely punctate-striate, the interstices feebly raised, and with a row of moderately coarse punctures within the margin. Fifth ventral segment emarginate at the apex in the male.

Length 5–6, breadth 2¼–2⅓ millim. (♂ ♀.)

*Hab.* Panama, Bugaba, David, and Caldera in Chiriqui (*Champion*).

Eleven examples. Smaller and less elongate than *P. rugulosa*, the antennæ with the apical two joints flavo-testaceous, the elytra more distinctly striate, the upper surface more opaque.

### 32. **Ptilodactyla punctatissima.**

Moderately elongate, flattened above, subopaque; thickly clothed with fine greyish pubescence, that on the disc of the elytra usually fuscous (leaving the suture and sides paler); brownish-black, fuscous, or rufo-fuscous, the suture and sides of the elytra and the entire head and prothorax sometimes ferruginous, the antennæ black, with the two basal joints obscure testaceous and the apical one flavo-testaceous, the legs testaceous, the tibiæ sometimes infuscate or piceous; the entire upper surface densely, rugulosely punctate, the under surface very finely rugulose. Head broad, the eyes large and prominent in the male, smaller in the female; antennæ elongate, slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax transverse, feebly convex in front, sharply margined at the sides and apex and explanate at the sides behind, the latter rapidly converging from a little before the base to the apex and rounded and slightly converging behind, the hind angles sharp; the base bisinuate, finely denticulate. Scutellum with a shallow notch in the centre in front and indications of a smooth impressed median line. Elytra moderately long, very little wider than the widest part of the prothorax, subparallel in their basal half, flattened on the disc towards the base, sharply margined at the sides, the apices somewhat produced; obsoletely punctate-striate, the interstices feebly convex, and with a row of moderately coarse punctures within the margin. Fifth ventral segment deeply emarginate at the apex in the male. Tarsal claws rectangularly dilated in both sexes.

Length 6–7, breadth $2\frac{1}{3}$–$2\frac{4}{5}$ millim. (♂ ♀.)

*Hab.* MEXICO, Chinautla, Santecomapan (*Sallé*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Teleman in Vera Paz (*Champion*).

Twelve species, eight of which are from Teapa. Smaller, less elongate, and more convex than *P. rugulosa*, the elytra more distinctly striate, the thorax less flattened in front. Less opaque and distinctly more convex than *P. varicornis*, the antennæ with the apical joint only (and in the male the tip of the last ramus also) flavo-testaceous. The densely rugulose surface and the form of the claws in the male distinguish the present species from *P. mexicana* and its allies.

### 33. **Ptilodactyla integra.**

♀. Oblong-elliptic, rather narrow, a little flattened above, shining, thickly clothed with pallid pubescence; testaceous, with the elytra suffused with piceous—leaving a humeral patch, the suture and sides, and the apex indeterminately, of the ground-colour—and the under surface similarly coloured, or entirely testaceous, the antennæ and legs testaceous. Head rugulosely punctured, the eyes moderately large; antennæ long and slender, feebly serrate. Prothorax short, feebly convex in front, the sides rounded and converging from a little before the base to the apex, the hind angles acute; the base trisinuate, smooth; the surface thickly, finely punctate. Scutellum transversely cordate, flat, unemarginate in front, closely punctured. Elytra moderately long, wider than the prothorax, acutely margined at the sides, and a little produced at the apex, the humeri rounded; very distinctly and rather coarsely punctate-striate to near the apex, the interstices slightly raised and rugulosely punctured.

Length $3\frac{1}{3}$–$3\frac{3}{4}$, breadth $1\frac{1}{2}$–$1\frac{3}{4}$ millim.

*Hab.* MEXICO, Toxpam (*Sallé*); GUATEMALA, Senahu in Vera Paz (*Champion*).

Two examples, differing in size and colour, both from the Atlantic slope. Closely allied to *P. breviscutum*, from the Pacific slope of Guatemala; but differing from it in

the very distinctly punctate-striate elytra (with the punctures of the striæ much coarser than those of the interstices), the more finely punctured thorax, and the more convex and more parallel general shape. The description is chiefly taken from the Senahu specimen, the other being mutilated.

### 34. **Ptilodactyla scutata.**

Elliptic, short, convex, shining, clothed with long fulvo-cinereous pubescence; piceous or reddish-brown, the head and disc of the prothorax more or less black, the antennæ piceous or black, brownish at the tip, the two basal joints reddish, the legs obscure ferruginous, the tarsi testaceous. Head sparsely punctured, with the interspaces very finely rugulose, the eyes large and rather prominent; antennæ long and slender, the joints 4–10 each with a long ramus in the male and serrate in the female. Prothorax transverse, sharply margined at the sides and apex, feebly convex in front, the sides rounded and converging almost from the base, the hind angles sharp; the base bisinuate, truncate in the middle, smooth; the surface thickly and somewhat coarsely granulate-punctate. Scutellum moderately large, flat, transversely cordate, unemarginate in front. Elytra short, wider than the prothorax, feebly rounded and sharply margined at the sides, slightly produced at the apex, the humeri rounded; thickly, finely, confusedly punctate, with a row of rather coarse punctures within the margin and indications of a faint sutural stria. Fifth ventral segment emarginate at the apex in the male. Tarsal claws rectangularly dilated in both sexes.

Length $4\frac{1}{8}$–$4\frac{2}{5}$, breadth 2–$2\frac{1}{5}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Three males and one female. This small species differs from nearly all the others here described in the strongly transverse, flat, unemarginate scutellum.

### 35. **Ptilodactyla breviscutum.**

♀. Oblong-elliptic, narrow, flattened above, shining, finely pubescent; fusco-ferruginous, the eyes black, the antennæ and legs testaceous. Head closely punctured, the eyes large; antennæ long and slender, serrate from the fourth joint. Prothorax short, moderately convex in front, the sides rounded and converging almost from the base, the hind angles acute; the base trisinuate, smooth; the surface thickly granulate-punctate. Scutellum short, strongly transverse, closely punctate, without trace of emargination in front. Elytra moderately long, forming almost a continuous outline with the prothorax, and at the middle much wider than it, acutely margined at the sides; thickly, finely punctate, and also obsoletely striate on the disc.

Length $3\frac{1}{10}$, breadth $1\frac{1}{2}$ millim.

*Hab.* Guatemala, Zapote (*Champion*).

One example. This small species is of about the same shape as *P. marginata*, but differs from it in the unemarginate scutellum, this last-mentioned character bringing it near *P. scutata*, which is a more convex, broader insect, with longer pubescence, less broadly margined elytra, blackish antennæ, &c.

### 36. **Ptilodactyla dilaticollis.** (Tab. XXVII. figg. 19, ♂; 19 *a*, antenna.)

♂. Moderately elongate, rather convex, somewhat flattened above, shining; very sparsely clothed with rather long, fine, decumbent, brownish hairs, the elytra with longer scattered erect hairs intermixed; nigro-piceous, the head, prothorax, and scutellum, the margins and suture of the elytra, and the abdomen in great part rufo-piceous. Head moderately broad, finely rugulose, the eyes very large and prominent; antennæ slender, elongate, joints 4–10 each with a long ramus, the outer rami becoming very elongate.

Prothorax short and very broad, convex on the disc, appearing broadly explanate at the sides, widest before the middle; the sides acutely margined, abruptly, arcuately converging and strongly declivous in front, and slightly sinuate before the base; the hind angles acutely produced behind; the base trisinuate, denticulate, and with a prominent projecting tooth in the centre; the surface somewhat thickly and finely granulate-punctate. Scutellum small, rugulose, feebly notched in the centre in front. Elytra moderately long, narrower at the base than the prothorax, widening to about the middle and arcuately narrowing thence to the apex, the disc flattened towards the base and declivous from about the middle to the apex, the sides broadly and acutely margined, the apices somewhat produced, the humeri raised and acutely rectangnlar; the surface sparsely, minutely, confusedly punctate, and with a deep sutural stria extending from the base to about the middle. Fifth ventral segment feebly emarginate at the apex. Tarsal claws with an acute, long, curved tooth.

Length $5\frac{1}{2}$–$6\frac{1}{2}$, breadth $2\frac{1}{2}$–3 millim.

*Hab.* Panama, Volcan de Chiriqui 3000 feet (*Champion*).

Two examples. Differs from all the other species of the genus described here in the peculiar form of the thorax and the very prominent acute humeri. The general facies is very like that of the genus *Lycoperdina* in the Endomychidæ.

### 37. **Ptilodactyla denticollis.** (Tab. XXVII. fig. 20, ♀.)

♀. Moderately elongate, broad, flattened above, shining; thickly clothed with short brown pubescence; pitchy-black, the mouth-parts, scutellum, the anterior margin and hind angles of the prothorax, and the abdomen in part, reddish, the antennæ reddish-brown, the legs fusco-ferruginous. Head broad, densely, rugulosely punctate, the eyes large; antennæ elongate, slender, acutely serrate. Prothorax very broad, short, flattened on the disc, feebly convex in front, acutely margined laterally and at the apex; the sides explanate behind, strongly and angularly dilated before the base, obliquely converging thence to the apex, and abruptly constricted immediately before the acute posteriorly produced hind angles; the base trisinuate, finely denticulate, and with a projecting tooth in the centre; the surface thickly, finely punctate. Scutellum large, very finely rugulose, and with a moderately deep notch in the centre in front. Elytra rather long, in front slightly wider than the base of the prothorax, and at the middle about as wide as the dilated portion of the latter, narrowly margined at the sides, subparallel to a little beyond the middle and somewhat rapidly narrowing thence to the apex, the apices slightly produced, the humeri rounded; finely punctate-striate to near the apex, the striæ almost obsolete, the interstices flat and very finely, rugulosely punctate.

Length $9\frac{1}{2}$, breadth 4 millim.

*Hab.* Costa Rica, Volcan de Irazu 6000 feet (*Rogers*).

One example only, a female, of this remarkable species has been received. It may be at once identified by the very prominent angular dilatation of the sides of the thorax behind, the dilated portions projecting laterally to far beyond the acute hind angles. The notch in the scutellum is not very deep.

### 38. **Ptilodactyla sulcata.**

Elliptic, rather elongate, convex, shining, thickly clothed with short pale brownish pubescence; piceous above, obscure ferruginous beneath, the antennæ and legs ferrugineo-testaceous. Head rugulosely punctured, the eyes moderately large; antennæ elongate, slender, the joints 4–10 each with a long ramus in the male and serrate in the female. Prothorax short, transversely convex in front, sharply margined at the sides, the sides rounded and rapidly converging from the base forwards, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface thickly and rather coarsely granulate-punctate. Scutellum thickly punctured, very deeply notched in the centre in front, and with a

broad, deep, median channel. Elytra moderately long, at the middle much wider than the prothorax, a little narrowed at the base and there forming almost a continuous outline with it, narrowly margined at the sides; obsoletely seriate-punctate to near the apex, the interstices flat and thickly punctured. Fifth ventral segment narrowly and deeply marginate at the apex in the male. Tarsal claws dilated to beyond the middle and with an acute curved tooth in the male, and rectangularly dilated in the female.

Length 7–7¼, breadth 3$\frac{1}{10}$–3¼ millim. (♂ ♀.)

*Hab.* MEXICO, Juquila in Oaxaca (*Sallé*).

One male and three females. Very like *P. convexa* and *P. confinis*, near which it would be better placed; but differing from them in having the scutellum still more deeply sulcate, and the dilated portion of the claws longer, and terminating in a curved tooth, in the male.

### 39. **Ptilodactyla pruinosa.**

Moderately elongate, narrow (♂), broader (♀), somewhat flattened above, shining, thickly clothed with short greyish pubescence; reddish-brown above, obscure ferruginous beneath, the antennæ piceous or brown, with the two basal joints reddish, the legs testaceous. Head rugulosely punctured, the eyes large; antennæ very elongate, slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax very short, transversely convex in front, sharply margined at the sides, the latter rounded and converging almost from the base, the hind angles sharp; the base trisinuate, strongly denticulate, and with a projecting tooth in the centre; the surface thickly, finely punctate. Scutellum thickly punctured, deeply notched in the centre in front, and narrowly sulcate thence to near the apex. Elytra rather elongate, not or very little wider than the prothorax, sharply margined at the sides, subparallel in their basal half and produced at the apex, the humeri obtusely rectangular; thickly, finely punctate, usually with indications of faint striæ, the sutural one more deeply impressed. Fifth ventral segment broadly and shallowly emarginate at the apex in the male. Tarsal claws with an acute tooth in the male and rectangularly dilated in the female.

Length 5–5¼, breadth 2–2$\frac{1}{8}$ millim. (♂ ♀.)

*Hab.* MEXICO, Toxpam, near Cordova (*Sallé*).

Two males and two females. In this small, rather elongate species the humeri are more angular than in most of the allied forms, and the antennæ are much darker in colour than the legs. It closely resembles *P. convexicollis*, but is much more elongate, and has more angular humeri (in this respect agreeing with *P. gibbicollis*), differently coloured antennæ, more sharply toothed claws in the male, &c. *P. pruinosa* is very like *P. heterophya*, Kirsch, from Peru, but it has a smoother thorax, with the base more strongly denticulate, the antennæ darker, the elytra longer, &c.

### 40. **Ptilodactyla caudata.** (Tab. XXVII. figg. 22, ♂; 22 *a*, maxilla and maxillary palpus; 22 *b*, fifth ventral segment; 22 *c*, ditto, in profile; 22 *d*, genitalia.)

♂. Moderately elongate, convex, shining; sparsely clothed with short, fine, greyish pubescence; nigro-piceous, the antennæ testaceous, becoming darker towards the base, the two basal joints sometimes reddish, the legs piceous or brownish, with the tarsi testaceous at the tip. Head thickly punctured, the eyes very large and prominent; antennæ very elongate, slender, joints 4–10 each with a long ramus, all the rami longer than the joints themselves. Prothorax short, transversely convex in front, sharply margined at the sides, the latter rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface very finely, rather sparsely punctate, the punctures placed upon distinct granules towards the sides

behind. Scutellum large, minutely punctured, notched in the centre in front. Elytra elongate, very little wider than the base of the prothorax, acutely margined at the sides, subparallel in their basal half, and strongly and rather broadly produced at the apex, the apices separately rounded and dehiscent at the suture, the humeri rounded; obsoletely and very finely seriate-punctate, the row of punctures next the suture placed in a shallow stria, and with a row of coarse punctures within the margin, the interstices flat and sparsely, minutely punctate. Beneath sparsely, finely punctate, the propleuræ closely granulate-punctate. Fifth ventral segment broadly and deeply emarginate at the apex and broadly depressed in the middle behind, the depression limited on either side by a strongly raised oblique ridge which is fringed with long golden hairs. Tarsal claws with an acute curved tooth.

♀. Antennæ serrate; elytra with the apices moderately and rather sharply produced; tarsal claws rectangularly dilated.

Length 6–8½, breadth 2⅘–3⅓ millim.

*Hab.* GUATEMALA, Cerro Zunil (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).

Two males and one female from Nicaragua, a male from Chiriqui, and a female from Guatemala. Differs from all the other Central-American species in the caudate elytra of the males, and the extraordinary form of the fifth ventral segment in this sex. The females may not belong to the same species.

Three others of the same sex, from Chiriqui, all in a mutilated condition, differ from these in having the elytra more rounded and less produced at the apex, and the sides more broadly margined. A male from Chontales is figured.

### 41. **Ptilodactyla tropicalis.**

Oval, broad or moderately broad, convex, slightly flattened above, shining; sparsely clothed with long, decumbent, brownish hairs; black, piceous, or rufo-castaneous, the antennæ and legs testaceous or obscure testaceous. Head broad, sparsely granulate-punctate, the eyes very large and prominent; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, transversely convex in front, acutely margined laterally and at the apex, slightly explanate at the sides behind, the sides rounded and rapidly converging from the base, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface sparsely and conspicuously granulate-punctate. Scutellum sparsely punctured, deeply notched in the centre in front. Elytra moderately long, broader than the prothorax, slightly rounded and broadly margined at the sides, gradually narrowing from a little below the base, somewhat flattened on the disc anteriorly, the apices rather sharp, the humeri rounded; distinctly seriate-punctate—the punctures placed in almost obsolete striæ, becoming coarser outwards and shallower towards the apex,—and also with a row of coarse punctures within the margin, the interstices flat, finely and rather sparsely punctate. Fifth ventral segment feebly emarginate at the apex in the male. Tarsal claws with an acute, curved tooth in the male, rectangularly dilated in the female.

Length 5¾–7¾, breadth 2½–3½ millim. (♂ ♀.)

*Hab.* MEXICO, Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Panzos and San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Caldera, Volcan de Chiriqui (*Champion*).

Found in numbers in Chiriqui, rarely elsewhere. Varies greatly in size and colour, the males often being much smaller and more parallel than the females. This species may be distinguished from the allied forms by the conspicuous scattered granules on the thorax (resembling coarse punctures, when viewed under an ordinary lens). The

seriate punctures on the elytra are usually much coarser than those of the interstices, and in some specimens they are placed in shallow striæ. In one female example from Chiriqui, evidently belonging to the same species, the punctures on the disc of the thorax are exceedingly fine and not placed upon raised granules.

### 42. **Ptilodactyla mexicana.**

Oval, broad or moderately broad, feebly convex, flattened above, shining; somewhat thickly clothed with long decumbent, brownish hairs; black, piceous, or reddish-brown, the antennæ and legs obscure testaceous. Head thickly granulate-punctate, the eyes large and prominent; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and narrow and acutely serrate in the female. Prothorax short, transversely convex in front, acutely margined laterally and at the apex, explanate at the sides behind, the sides rounded and rapidly converging from the base, the hind angles acute; the base trisinuate, finely denticulate, and with a projecting tooth in the centre; the surface thickly and finely granulate-punctate. Scutellum thickly punctured, notched in the centre in front. Elytra moderately long, broader than the prothorax, slightly rounded and broadly margined at the sides, gradually narrowing from a little below the base, flattened on the disc, the apices rather sharp, the humeri rounded; finely and indistinctly seriate-punctate, the punctures not or very little coarser than those of the interstices and sometimes obliterated on the disc, and also with a row of coarse punctures within the margin, the interstices flat, finely and somewhat thickly punctate, slightly rugulose in some specimens. Fifth ventral segment feebly emarginate at the apex in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length 6–9, breadth 2¾–4 millim. (♂ ♀.)

*Hab.* MEXICO, San Andres Tuxtla, Toxpam, and Cosamaloapam in Vera Cruz (*Sallé*), Jalapa (*Höge*).

Sent in plenty from Eastern Mexico. This insect is very closely allied to *P. tropicalis*, from which it differs in having the body more flattened above, the thorax more closely and less conspicuously granulate-punctate, and the seriate punctures on the elytra much less distinct. In one specimen the scutellum is very feebly notched in front.

Some of the specimens in the Sallé collection are labelled with the MS. name *Ptilodactyla mexicana*, Chevr.

### 43. **Ptilodactyla opima.**

Oblong-elliptic, broad, robust, shining; thickly clothed with short, fine, decumbent brownish pubescence; pitchy-black, piceous, or obscure reddish-brown, the antennæ and legs testaceous or fusco-testaceous. Head broad, thickly punctate, the eyes large and prominent; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male (the outer rami slightly longer than the joints themselves) and serrate in the female. Prothorax short, transversely convex in front, sharply margined at the sides, the latter slightly explanate behind, rapidly converging from about the basal third forwards, and subparallel towards the base, the hind angles acute; the base trisinuate, denticulate, and with a projecting tooth in the centre; the surface thickly, finely punctate. Scutellum large, minutely punctured, notched in the centre in front, the anterior margin sometimes finely denticulate. Elytra moderately long, acutely margined at the sides, a little produced at the apex, the humeri rounded; obsoletely seriate-punctate, the punctures usually becoming more distinct towards the sides, and along the suture at the base, where they are placed in a deep stria, and with a row of coarse punctures within the margin, the interstices flat, thickly punctate, rugulose in one specimen. Fifth ventral segment deeply arcuate-emarginate in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

***Var.*** The elytra more distinctly seriate-punctate, the punctures placed in shallow striæ in one specimen, the outer interstices slightly raised.

Length $7\frac{1}{2}$–$8\frac{1}{3}$, breadth $3\frac{1}{3}$–4 millim. (♂ ♀.)

*Hab.* GUATEMALA, San Isidro (*Champion*); PANAMA, Bugaba, Caldera, Volcan de Chiriqui (*Champion*).

1 ♂ Paratype
USNM
1936

Found in numbers at Caldera. The variety, represented by four specimens, is from the Volcan de Chiriqui. From Guatemala a single female example only has been obtained. Allied to *P. mexicana*, but more robust and less flattened above, the scutellum larger and usually not so deeply notched in the centre in front.

*P. opima* is also very like *P. vilis*, Kirsch, from Peru, but it is more robust and has a smoother thorax, the basal margin of the latter being more finely denticulate.

### 44. **Ptilodactyla denticulata.** (Tab. XXVII. fig. 23, fifth ventral segment, ♂.)

Moderately elongate, rather narrow and somewhat fusiform (♂), broader and subparallel (♀), flattened above, shining, thickly clothed with rather coarse, short, brownish pubescence; piceous or reddish-brown, the antennæ and legs testaceous or brownish, the femora sometimes paler. Head densely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a rather long ramus in the male and serrate in the female. Prothorax short, moderately convex in front, sharply margined at the sides and apex and slightly explanate at the sides behind, the sides rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, denticulate throughout; the surface coarsely granulate-punctate. Scutellum closely punctured, notched in the centre in front. Elytra moderately long, subparallel in their basal half in the female, usually widest at the shoulders in the male, wider than the prothorax, sharply margined at the sides, rapidly narrowing towards the apex, and with the apices a little produced, the humeri rounded; finely and shallowly punctate-striate to near the apex, the interstices flat and rugulosely punctate. Fifth ventral segment in the male abruptly and very deeply emarginate at the apex, and slightly plicate on either side of this, the two plicæ meeting along the median line and enclosing a triangular space in front of the emargination, and in some specimens extending forwards as a single plica to the base, and with a space on either side of this very finely longitudinally wrinkled. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $6\frac{1}{3}$–$7\frac{1}{2}$, breadth $2\frac{1}{2}$–3 millim. (♂ ♀.)

*Hab.* MEXICO, Puebla, Toxpam, Cordova, Juquila (*Sallé*), Orizaba (*H. H. Smith*); GUATEMALA, near the city (*Salvin*), Dueñas and Capetillo (*Champion*); COSTA RICA, R. Sucio, Caché, and Volcan de Irazu (*Rogers*).

1 ♀ Paratype
USNM

Found in numbers at the Volcan de Irazu, sparingly elsewhere. This is one of several extremely closely allied Central-American species which can only be distinguished with certainty by the abdominal male-characters, these being very characteristic in *P. denticulata*. The males are somewhat fusiform in shape.

### 45. **Ptilodactyla æquinoctialis.**

Elongate, rather narrow (♂), broader (♀), flattened above, shining, thickly clothed with short brownish pubescence; piceous or rufo-castaneous, the humeri sometimes with a reddish patch, the legs and antennæ brownish or testaceous. Head rugulose, the eyes large; antennæ elongate, slender, the joints 4–10 each with a long ramus in the male and serrate in the female. Prothorax short, moderately

convex in front, sharply margined at the sides and apex, and slightly explanate at the sides behind, the latter rounded and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, denticulate; the surface closely, rather coarsely granulate-punctate. Scutellum closely punctured, with a short notch in the centre in front. Elytra moderately elongate, wider than the prothorax, parallel in their basal half, sharply margined at the sides, the humeri rounded; distinctly punctate-striate, the interstices flat and rugulosely punctured. Fifth ventral segment in the male narrowly and very deeply emarginate at the apex, and with a raised space on either side of the emargination, which is fringed with hairs within, the segment appearing depressed in the middle behind. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length 8–9¾, breadth 3–4 millim. (♂ ♀.)

*Hab.* Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

One male and two females from Costa Rica and a female from Chiriqui, the latter larger and more robust than the others and having the scutellum denticulate in front.

This insect is very like *P. denticulata*, of which at first sight it would appear to be nothing more than a large variety, but the form of the fifth ventral segment of the male is quite different.

### 46. **Ptilodactyla serrata.**

Moderately elongate, narrow, flattened above, shining, thickly clothed with rather long pallid pubescence; fusco-testaceous, the antennæ and legs testaceous. Head densely punctured, the eyes large; antennæ elongate, slender, the joints 4–10 each with a moderately long ramus in the male and feebly serrate in the female. Prothorax short, moderately convex in front, the sides slightly explanate behind, sharply margined, and rounded and rapidly converging from about the basal third forwards, the hind angles acute; the base bisinuate, the entire margin strongly denticulate; the surface closely granulate-punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra elongate, subparallel in their basal half, wider than the prothorax, sharply margined at the sides, the apices rather sharp, the humeri rounded; obsoletely punctate-striate, the interstices rugulosely punctured. Fifth ventral segment arcuate-emarginate at the apex in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length 5½–6, breadth 2⅕–2⅓ millim. (♂ ♀.)

*Hab.* Costa Rica, Caché (*Rogers*); Panama, Volcan de Chiriqui 3000 feet (*Champion*).

A male example from each locality. We also possess a mutilated female specimen labelled as from Guatemala, but this locality requires confirmation. Smaller and more depressed than *P. denticulata*, the entire basal margin of the thorax very distinctly denticulate, the fifth ventral segment very differently formed in the male. The denticulation of the base of the thorax is unusually distinct, a character separating the species from most of the allied forms.

### 47. **Ptilodactyla germana.**

Oblong-elliptic, flattened above, shining, thickly clothed with pallid pubescence; obscure ferruginous, with the head, the disc of the prothorax, and the disc of the elytra piceous, the elytra becoming paler towards the apex, the under surface in great part ferruginous, the antennæ and legs obscure testaceous. Head rugulosely punctured, the eyes moderately large; antennæ very long and slender, the joints 4–10 each with a moderately long ramus in the male and acutely serrate in the female. Prothorax transverse, rather

convex in front, sharply margined at the sides and apex, and slightly explanate at the sides behind, the sides rounded and converging from the base, the hind angles acute; the base trisinuate, finely denticulate at the sides and in the middle, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra moderately long, wider than the prothorax, sharply margined at the sides, the humeri rounded; obsoletely seriate-punctate or very finely punctate-striate, and with a row of coarse punctures within the margin, the interstices rugulosely punctate. Fifth ventral segment shallowly arcuate-emarginate at the apex in the male. Tarsal claws with a curved tooth in the male and rectangularly dilated in the female.

Length $5\frac{1}{2}$–6, breadth $2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

One pair. A second male from the same locality probably belongs here; it has, however, the apices of the elytra sharper and slightly produced. This species is very like *P. serrata*, but differs from it in the much finer and incomplete denticulation of the basal margin of the thorax. From *P. denticulata* it may be known by its less elongate shape and the different form of the last ventral segment in the male; from *P. parallela* by the fine but distinct denticulation of the greater part of the base of the thorax; and from *P. granulicollis* by its larger size, broader form, less distinctly striate elytra, &c. In one specimen the fine seriate punctures on the elytra are obliterated beyond the middle.

## 48. **Ptilodactyla subparallela.**

♂. Moderately elongate, rather depressed, shining, thickly clothed with yellowish-cinereous pubescence; pitchy-black or piceous, the margins of the prothorax, the scutellum, and the suture and shoulders of the elytra indeterminately reddish in one specimen, the antennæ piceous or brownish, the legs obscure testaceous. Head rugulosely punctured, the eyes moderately large; antennæ long and slender, the joints 4–10 each with a moderately long ramus. Prothorax short, feebly convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from the basal third forwards; the base trisinuate, finely denticulate; the surface thickly granulate-punctate. Scutellum rugulose, notched in the centre in front. Elytra elongate, subparallel in their basal half, wider than the prothorax, sharply margined at the sides, the humeri rounded; finely, rugulosely punctate, and in one specimen obsoletely striate on the disc. Fifth ventral segment feebly arcuate-emarginate at the apex. Tarsal claws with an acute curved tooth.

Length $5\frac{1}{2}$–6, breadth $2\frac{1}{5}$–$2\frac{1}{3}$ millim.

*Hab.* Mexico, Jalapa (*Höge*).

Two males. Very like *P. denticulata*, but more depressed and more parallel, the fifth ventral segment very differently formed in the male.

From *P. serrata*, which it resembles in shape, it may be distinguished by the more sinuate and less strongly denticulate basal margin of the thorax.

## 49. **Ptilodactyla forcipata.**

Moderately elongate, flattened above, shining, thickly clothed with rather long yellowish-cinereous pubescence; rufo-fuscous or obscure rufo-testaceous, the legs and antennæ testaceous or obscure testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, convex, and greatly narrowed in front, acutely margined at the sides and apex, the sides rounded behind and rapidly converging from

about the basal third forwards, the hind angles acute; the base trisinuate, finely denticulate, and with a short projecting tooth in the centre; the surface closely granulate-punctate. Scutellum rugulosely punctured, deeply notched in the centre in front. Elytra moderately long, a little wider than the prothorax, sharply margined at the sides, narrowing from the middle, and somewhat acutely produced at the apex, the humeri rounded; shallowly but distinctly punctate-striate to near the apex, the interstices thickly, rugulosely punctured, granulate towards the base in some specimens. Fifth ventral segment broadly and very deeply truncate-emarginate at the apex, and broadly depressed along the middle in front of the emargination. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $4\frac{1}{2}$–$5\frac{9}{10}$, breadth $1\frac{9}{10}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* MEXICO, Omilteme, Xucumanatlan, and Chilpancingo in Guerrero, Cuernavaca in Morelos (*H. H. Smith*).

Found in numbers in Guerrero. This is one of several very closely allied Central-American species, amongst which it may chiefly be known by its somewhat conical, acutely margined, granulate thorax, the deeply notched scutellum, the sharply margined, rather acuminate, punctate-striate elytra, and the form of the fifth ventral segment in the male. The emargination of this segment is so deep in this sex that the lateral portions project like a pair of forceps, these being visible from above. *P. forcipata* resembles *P. denticulata* in shape, but it is less elongate and much smaller. Some of the males have the third joint of the antennæ considerably shorter than the fourth.

### 50. **Ptilodactyla granulicollis.**

Moderately elongate, flattened above, shining, thickly pubescent; rufo-fuscous or obscure rufo-testaceous, the legs and antennæ testaceous. Head rugulosely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, convex and much narrowed in front, sharply margined at the sides and apex, the sides rounded behind and rapidly converging from about the basal third forwards; the base trisinuate, finely denticulate, and with a short projecting tooth in the centre; the surface thickly granulate-punctate. Scutellum rugulosely punctured, deeply notched in the centre in front. Elytra finely punctate-striate, the interstices rugulosely punctured. Fifth ventral segment broadly and not very deeply arcuate-emarginate at the apex in the male.

Length $3\frac{9}{10}$–$5\frac{1}{2}$, breadth $1\frac{2}{3}$–$2\frac{2}{5}$ millim. (♂ ♀.)

*Hab.* GUATEMALA, San Gerónimo and Capetillo (*Champion*).

Found in some numbers at Capetillo. Extremely closely allied to *P. forcipata*, and only separable from it by the different form of the fifth ventral segment in the males. This character, however, is perfectly constant in the numerous males of both species examined. Two males from Vera Cruz (*H. H. Smith*) and a female from Cordova, Mexico (*Höge*), probably belong here: the males have slightly longer elytra than those from Guatemala and the female is considerably larger and broader.

*P. granulicollis* may prove to be inseparable from *P. angustata*, Horn, from Florida, specimens of which are not obtainable for comparison.

## 51. **Ptilodactyla forticornis.**

♂. Moderately elongate, narrow, rather convex, shining, thickly clothed with coarse brownish pubescence; pitchy-black, the prothorax reddish-brown beneath, the antennæ piceous, the rami paler, the legs and palpi testaceous, the tibiæ darker. Head densely punctured, the eyes moderately large; antennæ moderately elongate, stout, the joints 4–10 each with a stout ramus, the outer rami very little longer than the joints themselves, joint 3 stout, triangular, slightly shorter than 4. Prothorax broader than long, convex in front, sharply margined at the sides and apex, the sides parallel behind and arcuately converging in front, the hind angles acute; the base trisinuate, finely denticulate, and with a short projecting tooth in the centre; the surface closely and somewhat coarsely granulate-punctate. Scutellum sparsely punctured, deeply notched in the centre in front. Elytra elongate, distinctly wider than the prothorax, parallel in their basal half, and conjointly rounded at the apex, the humeri rounded; thickly, finely punctate, and obsoletely striate. Fifth ventral segment emarginate at the apex. Legs stout. Tarsal claws with an acute curved tooth.

Length $4\frac{2}{3}$, breadth nearly 2 millim.

*Hab.* MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One example. A small, narrow, elongate species, with unusually stout legs and antennæ and coarse pubescence. The antennal rami are very stout and comparatively short. The form of the antennæ and claws distinguishes it at once from *P. gracilis*, &c.

## 52. **Ptilodactyla pallescens.**

Oval, depressed, shining, thickly pubescent, testaceous. Head rugulosely punctured, the eyes large; antennæ very long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female, 3 a little shorter than 4 in the male. Prothorax short, feebly convex and greatly narrowed in front, sharply margined at the sides and apex, and explanate at the sides behind, the sides rounded and rapidly converging almost from the base, the hind angles sharp; the base trisinuate, smooth; the surface thickly punctate. Scutellum rugulosely punctured, with a shallow notch in the centre in front. Elytra moderately long, forming almost a continuous outline with the prothorax, and at the middle very much wider than it, rounded and broadly margined at the sides; obsoletely punctate-striate to near the apex, the interstices thickly, rugulosely punctate. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $5\frac{1}{4}$–$5\frac{3}{4}$, breadth $2\frac{1}{2}$–$2\frac{7}{8}$ millim. (♂ ♀.)

*Hab.* COSTA RICA, Volcan de Irazu 6000 feet (*Rogers*).

One pair. This species somewhat resembles *P. deleta*, but it is much larger, more depressed, and oval in shape, and the sides of the thorax are explanate behind.

## 53. **Ptilodactyla parallela.**

Oblong, narrow (♂), broader (♀), flattened above, shining, thickly clothed with short, fine brownish pubescence; piceous, the hind angles of the prothorax and the suture and epipleuræ of the elytra obscure ferruginous, the antennæ testaceous or obscure testaceous, the legs piceous or brown, the tarsi testaceous. Head rugulosely punctured, the eyes large, prominent in the male; antennæ slender, elongate, the joints 4–10 each with a rather long ramus in the male and serrate in the female. Prothorax short, feebly convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging from a little before the base to the apex, the hind angles sharp; the base trisinuate, smooth; the surface thickly, finely punctate. Scutellum closely punctured, feebly notched in the centre in front. Elytra moderately long, parallel in their basal half, sharply margined at the sides, wider than the prothorax, and slightly produced at the apex, the humeri rounded; obsoletely seriate-punctate to near the apex, the interstices flat and thickly, minutely punctate. Fifth ventral segment feebly arcuate-emarginate at the apex in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $5\frac{2}{5}$–$6\frac{2}{5}$, breadth $2\frac{1}{10}$–$2\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

A male from Costa Rica and a female from Chiriqui. Very like *P. denticulata*, but with the thorax much more finely punctured and its basal margin smooth, the fifth ventral segment very differently formed in the male.

### 54. **Ptilodactyla deleta.**

Moderately elongate, rather narrow, flattened above, shining, thickly clothed with yellowish-cinereous pubescence; varying in colour from piceous to rufo-testaceous or testaceous, the elytra with a paler humeral patch, the antennæ and legs testaceous or obscure testaceous. Head densely punctured, the eyes large; antennæ long and slender, the joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, convex and greatly narrowed in front, sharply margined at the sides and apex, the sides rounded behind and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, feebly denticulate towards the sides; the surface thickly punctured. Scutellum rugulosely punctate, with a shallow notch in the centre in front. Elytra moderately long, a little wider than the prothorax, subparallel in their basal half, sharply margined at the sides and slightly produced at the apex, the humeri rounded; punctate-striate to near the apex, the interstices rugulosely punctured. Fifth ventral segment subtriangularly emarginate at the apex in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $3\frac{2}{3}$–5, breadth $1\frac{1}{2}$–2 millim. (♂ ♀.)

*Hab.* Mexico, Amula in Guerrero, Teapa in Tabasco (*H. H. Smith*), Jalapa, Cerro de Plumas (*Höge*); Guatemala, near the city (*Salvin*), Zapote, Capetillo, Calderas, San Gerónimo, Chiacam (*Champion*).

Very near *P. forcipata* and *P. granulicollis*, but smaller and also rather more shining, differing from them chiefly in the feebly notched scutellum, the feebly denticulate basal margin of the thorax, and the subtriangularly emarginate fifth ventral segment in the male. Most of the Guatemalan specimens are testaceous in colour. The single male from Jalapa has the fifth ventral segment more deeply emarginate than the others.

### 55. **Ptilodactyla marcida.**

Oblong-oval, narrow, flattened above, shining, thickly clothed with yellowish-cinereous pubescence; piceous or fuscous, the elytra sometimes fusco-testaceous, the antennæ and legs testaceous or fusco-testaceous. Head densely punctured, the eyes large and prominent in the male, smaller in the female; antennæ elongate and very slender, the joints 4–10 each with a slender ramus in the male and very feebly serrate in the female. Prothorax short, convex and much narrowed in front, sharply margined at the sides and apex, the sides rounded behind and rapidly converging from a little before the base to the apex, the hind angles acute; the base trisinuate, almost smooth; the surface thickly punctate. Scutellum rugulosely punctate, with a very shallow notch in the centre in front. Elytra moderately long, considerably wider than the prothorax, sharply margined and distinctly rounded at the sides, the humeri rounded; punctate-striate to near the apex, the interstices rugulosely punctured. Fifth ventral segment subtriangularly emarginate at the apex in the male. Tarsal claws with an acute curved tooth in the male and rectangularly dilated in the female.

Length $3\frac{1}{4}$–4, breadth $1\frac{1}{2}$–$1\frac{3}{4}$ millim. (♂ ♀.)

*Hab.* Guatemala, Capetillo (*Champion*).

Nine specimens. Very nearly allied to *P. deleta*, but less parallel in shape, especially in the female, the basal margin of the thorax almost smooth, the body uniformly piceous or fuscous. In some of the specimens the punctures of the striæ are obsolete, but the striæ are still visible. The feebly notched scutellum separates it from *P. granulicollis*, &c.

A mutilated male example from Chiriqui perhaps belongs here.

### 56. **Ptilodactyla debilis.**

Moderately elongate, narrow, flattened above, shining, thickly clothed with fine short greyish pubescence; black or piceous, the legs and sometimes the two basal joints of the antennæ testaceous. Head rugulosely punctured, the eyes moderately large; antennæ long and stout, the joints 4–10 each with a short ramus in the male and serrate in the female. Prothorax short, feebly convex in front, compressed at the sides anteriorly, the sides subparallel behind, and arcuately converging forwards, the hind angles acute; the base trisinuate, smooth; the surface thickly, in some female specimens finely and more sparsely, punctate. Scutellum punctured, notched in the centre in front. Elytra moderately long, wider than the prothorax, parallel in their basal half, slightly depressed on the disc below the base, narrowly margined at the sides, the humeri rounded; distinctly, but shallowly punctate-striate on the disc, the interstices more finely, rugulosely punctate. Fifth ventral segment shallowly arcuate-emarginate in the male. Tarsal claws with an acute tooth in the male and rectangularly dilated in the female.

Length $2\frac{1}{2}$–$3\frac{4}{5}$, breadth 1–$1\frac{1}{2}$ millim. (♂ ♀.)

*Hab.* Mexico, Chilpancingo in Guerrero (*H. H. Smith*); Guatemala, Cerro Zunil (*Champion*).

Seven examples, one only, a male, being from Mexico. This very obscure species is allied to *P. tenuis*, but it is less elongate, the third and fourth joints of the antennæ are equal in length, and the thorax is more transverse and more rounded at the sides.

### 57. **Ptilodactyla rotundicollis.**

♀. Elongate, narrow, flattened above, shining, thickly clothed with fine greyish pubescence; pitchy-black, the antennæ piceous, the legs and palpi testaceous, the femora flavous. Head rugulosely punctured, the eyes moderately large; antennæ elongate, stout, the joints 4–10 serrate. Prothorax short, moderately convex in front, compressed at the sides anteriorly, widest at the middle, the sides acutely margined, rounded, and converging in front and behind; the base trisinuate and with a short projecting tooth in the centre, smooth; the surface thickly, finely punctate. Scutellum rugulosely punctured, notched in the centre in front. Elytra moderately elongate, wider than the prothorax, parallel in their basal half, slightly depressed on the disc below the base, narrowly margined, the humeri rounded; punctate-striate to near the apex, the interstices rugulosely punctured.

Length $3\frac{1}{2}$, breadth $1\frac{2}{5}$ millim.

*Hab.* Guatemala, San Gerónimo (*Champion*).

One example. Closely allied to *P. debilis*, but differing from it (and from nearly all the other species described here) in the posteriorly narrowed thorax, the sides of which are acutely margined and strongly rounded.

### 58. **Ptilodactyla tenuis.** (Tab. XXVII. figg. 26, ♂; 26 *a*, antenna.)

♂. Elongate, narrow, subcylindrical, flattened above, shining, rather sparsely clothed with moderately long greyish hairs; black, the tibiæ and the apices of the femora piceous, the rest of the legs testaceous. Head thickly punctured, the eyes moderately large; antennæ stout, nearly as long as the body, the joints

4–10 each with a rather stout ramus of about the same length as the joint to which it is articulated, joint 3 subtriangular, considerably shorter than 4. Prothorax transverse, subconical, thickly punctured, the hind angles acute; the base trisinuate, almost smooth. Scutellum thickly punctured, flat, with a shallow notch in the centre in front. Elytra elongate, considerably wider than the prothorax, parallel to beyond the middle, narrowly margined at the sides, the humeri rounded; shallowly but coarsely punctate-striate to near the apex, the interstices almost flat and rugulosely punctured. Legs long and slender. Tarsal claws with an acute curved tooth.

Length 4, breadth $1\frac{2}{5}$ millim.

*Hab.* GUATEMALA, Quiché Mountains 7000 to 9000 feet (*Champion*).

Two males. A very small, narrow, elongate species, with stout, black antennæ, a short, subconical thorax, and rather coarsely punctate-striate elytra. It approaches *P. forticornis*, but differs from that insect in the form of the thorax and scutellum, the slender legs, &c.

### 59. **Ptilodactyla costaricensis.**

♀. Oblong-elliptic, rather depressed, shining, thickly clothed with brownish pubescence; nigro-piceous, the antennæ brown, the legs obscure testaceous. Head rugulosely punctured, the eyes rather small; antennæ elongate, the outer joints becoming acutely serrate, 3 very long, slightly longer than 4. Prothorax very short, broad, moderately convex in front, acutely margined and somewhat explanate at the sides, the latter rounded and converging from about the basal third forwards, the hind angles acute; the base trisinuate, feebly denticulate at the sides and in the middle, and with a short projecting tooth in the centre; the surface closely and finely granulate-punctate. Scutellum rugulosely punctured, deeply notched in the centre in front. Elytra moderately elongate, wider than the prothorax, sharply margined and a little rounded at the sides, the humeri rounded; finely and obsoletely punctate-striate on the disc, the rest of the surface very finely and rugulosely punctured. Tarsal claws long, angularly dilated at the base only.

Length $5\frac{1}{3}$, breadth $2\frac{1}{2}$ millim.

*Hab.* COSTA RICA (*Rogers*).

One example. Differs from all the other species of the genus described here in the form of the tarsal claws, these being unusually long and angularly dilated at the base only (the angularly dilated portion of the claw usually extending to near the middle in the females of this genus). *P. costaricensis* resembles *P. subparallela* and *P. parallela* in shape, but is less elongate and less parallel.

## LACHNODACTYLA.

Apical joint of the maxillary palpi very elongate, large, and cultriform, with the inner side cleft down the middle and spongy within, in the male, and elongate, slender, and obliquely truncated at the tip in the female; the penultimate joint short, about half the length of the second. Tarsal claws dilated to beyond the middle and armed with an acute curved tooth in the male, acutely rectangularly dilated in the female. The other characters as in *Ptilodactyla*.

The two species from Mexico or Guatemala referred to this genus differ from *Ptilodactyla* in both sexes in the form of the maxillary palpi, the third joint being relatively very short and the fourth elongate, the latter being very elongate, large, and somewhat cultriform in the male. The apical joint in this sex is cleft down

the middle on the inner side and spongy within, the insect apparently having the power of distending it at will: in most of the specimens examined this joint has shrivelled a good deal in drying. A similar form of the tarsal claws is found in a section of *Ptilodactyla*. In both species the front of the scutellum, as well as the basal margin of the thorax, is denticulate, and in one of them the scutellum itself is very small. In the females of *L. parviscutum* the apical joint of the maxillary palpi is less elongate than in the corresponding sex of *L. monticola*.

### 1. **Lachnodactyla monticola.** (Tab. XXVII. fig. 25, ♂; 25 *a*, maxilla and maxillary palpus; 25 *b*, tarsal claw; 25 *c*, fifth ventral segment; 25 *d*, genitalia.)

Elongate, narrow, parallel, flattened above, shining, thickly clothed with rather long, decumbent, pale brownish hairs; pitchy-black or piceous, the elytra often paler than the prothorax and usually with an oblique streak at the shoulders and the sides towards the apex ferruginous or obscure testaceous, the antennæ piceous or obscure testaceous, the legs testaceous or obscure testaceous, the tibiæ usually darker. Head moderately broad, densely, rugulosely punctate, the eyes large and prominent in the male, much smaller in the female; antennæ long and slender, the joints 4–10 each with a slender ramus in the male and serrate in the female. Prothorax moderately transverse, feebly convex in front, and slightly depressed behind, sharply margined at the sides and apex, the sides rounded and rapidly converging almost from the base, the hind angles acute; the base bisinuate, denticulate; the surface thickly, somewhat coarsely granulate-punctate. Scutellum moderately large, transversely cordate, with a shallow notch in the centre in front and three fine teeth on either side of it. Elytra elongate, considerably wider than the prothorax, parallel in their basal half, narrowly margined at the sides, the humeri rounded; finely or obsoletely punctate-striate, the interstices flat and finely, rugulosely punctate. Fifth ventral segment arcuate-emarginate at the apex in the male.

Length 6–8, breadth 2–2¾ millim. (♂ ♀.)

*Hab.* Mexico (*Sallé*), Omilteme and Chilpancingo in Guerrero (*H. H. Smith*) Guatemala, Quiché Mountains 9000 feet, Las Calderas 7000 feet, and San Gerónim (*Champion*).

Found in numbers at Las Calderas and sparingly elsewhere, all the specimens having been found at a considerable elevation above the sea. The males are narrower than the females. The Mexican specimens have the elytra obsoletely punctate-striate.

### 2. **Lachnodactyla parviscutum.**

Moderately elongate, elliptic, flattened above, shining, thickly clothed with brownish pubescence; pitchy-black or piceous, the anterior margin of the prothorax and the shoulders or sides of the elytra sometimes ferruginous, the antennæ and legs brownish or testaceous. Head densely punctured, the eyes large; antennæ long and slender, joints 4–10 each with a moderately long ramus in the male and serrate in the female. Prothorax short, transversely convex in front, sharply margined at the sides and apex, the sides rounded and rapidly converging almost from the base, the hind angles acute; the base bisinuate, denticulate; the surface thickly, somewhat coarsely punctate. Scutellum very small, cordate, and usually with a shallow notch in the centre in front and two fine teeth on either side of it. Elytra moderately long, wider than the prothorax, broadly margined and somewhat rounded at the sides, the apices rather sharp; obsoletely punctate-striate, the interstices flat and finely, rugulosely punctate. Fifth ventral segment feebly arcuate-emarginate at the apex in the male.

Length 5½–7, breadth 2½–3 millim. (♂ ♀.)

*Hab.* Mexico, Jalapa (*Höge*).

Six examples. Easily separable from *L. monticola* by its broader and more oval shape and the very small scutellum. This insect closely resembles *Ptilodactyla mexicana*, but may be easily known from it by the very small, anteriorly denticulate scutellum, as well as by the form of the maxillary palpi.

## STIROPHORA.

Apical joint of the maxillary palpi ovate, slender, short. Mesosternum with a long and exceedingly prominent keel, the anterior portion of which is received between the strongly exserted front coxæ. Legs long and slender; the tibiæ with long spurs; hind tarsi with the basal joint very elongate, longer than the following joints united, joint 3 with a broad lobe, 4 scarcely visible; the claws with a rectangular tooth. The other characters as in *Ptilodactyla*.

The very prominent mesosternal keel distinguishes this genus from all the other Ptilodactylini. The only example received is of the female sex, and in a very bad state of preservation. The male probably has articulated rami to the antennæ.

### 1. **Stirophora sulcipennis.**

Elliptic, moderately convex, rather shining, thickly pubescent, rufo-piceous, the antennæ and tarsi testaceous; the upper surface closely, very finely punctate, the under surface very finely rugulose, the metasternum with minute scattered punctures. Head broad, the eyes prominent, moderately large; antennæ elongate, slender, joint 3 very long, longer than 4, 4–6 equal in length (the others broken off). Prothorax much broader than long, acutely margined at the sides, the latter explanate behind and rapidly converging from a little before the base to the apex, the hind angles rather obtuse, the disc depressed in the middle before the base; the base trisinuate, smooth. Scutellum transversely cordate, with a very shallow notch in the centre in front. Elytra moderately elongate, much wider than the prothorax, sharply margined at the sides, depressed on the disc below the base, the apices a little produced, the humeri rounded; sulcate, the sulci each with an almost obsolete row of punctures, the interstices convex throughout, and less closely and more rugulosely punctured than the prothorax.

Length $6\frac{1}{2}$, breadth 3 millim. (♀.)

*Hab.* NICARAGUA, Chontales (*Belt*).

## CHÆTODACTYLA.

Apical joint of the maxillary palpi ovate, small, not longer than the third, the second and third joints triangular and subequal. Head broad, vertical; the epistoma separated from the front by a very deep groove, the front slightly prominent on either side above the point of insertion of the antennæ; the eyes prominent, small. Antennæ (♀) elongate, the joints from the third flattened, strongly serrate, and greatly dilated, the outer ones becoming gradually narrower. Mesosternum feebly carinate down the middle between the coxæ. Legs elongate, slender, the tibiæ with long spurs; the middle and hind tarsi with the basal joint slender and very elongate, that of the hind tarsi longer than the other joints united, the basal joint of the anterior tarsi moderately elongate, the third joint with a broad lobe, the fourth joint extremely small, the claw-joint long and very slender; the claws with a broad acute tooth. The other characters as in *Ptilodactyla*.

The single species referred to this genus has a very different facies from that of any of the other Central-American Dascillidæ. The comparatively small and prominent eyes, the slender, very elongate basal joint of the middle and hind tarsi, the greatly dilated, flattened, strongly serrate, tapering antennæ, &c., separate it at once from *Ptilodactyla*. The insect resembles a Lycid and varies a good deal in the colour of the

elytra. The only male received is, unfortunately, in a fragmentary condition. The antennæ may prove to be differently formed in this sex.

1. **Chætodactyla lyciformis.** (Tab. XXVII. figg. 27, ♀ ; 27 *a*, antenna ; 27 *b*, maxilla and maxillary palpus.)

Elongate, moderately convex, flattened above, dull, the elytra slightly shining ; black, the prothorax testaceous or ferruginous, with a broad black median vitta, the scutellum black or ferruginous, the elytra varying in colour from black with the shoulders testaceous or ferruginous to testaceous with a black apical patch ; the antennæ black or piceous, with the apical joint and the apex of the tenth testaceous ; the legs black or piceous, the base of the femora and the coxæ more or less testaceous ; the upper surface densely, very finely granulate, and thickly pubescent, the pubescence ochreous on the light-coloured portions and fuscous elsewhere ; the under surface somewhat shining, very finely rugulose, and clothed with greyish pubescence. Antennæ (♀) about two-thirds the length of the body, joint 2 very small, 3 dilated, elongate-triangular, 4–10 each acutely produced at their inner apical angle, 4–7 very broadly dilated, 8–10 gradually becoming narrower, 11 slender, as long as 10, and acute at the tip. Prothorax a little broader than long, margined at the sides and in front, the sides rounded and converging almost from the base, the hind angles acute ; the base bisinuate, smooth. Scutellum transversely cordate, with a shallow notch in the centre in front. Elytra elongate, much wider than the prothorax, subparallel to beyond the middle, conjointly rounded at the apex, narrowly margined at the sides, the humeri rounded ; distinctly punctate-striate to the apex, the interstices rather convex. Fifth ventral segment feebly arcuate-emarginate at the apex in the male.

Length $5\frac{1}{2}$–$6\frac{1}{4}$, breadth 2–$2\frac{1}{2}$ millim.

*Hab.* NICARAGUA, Chontales (*Belt*, *Janson*).

Five females and one male, all mutilated, the male without head. The elytra vary in colour according to the predominance of the light or dark colour.

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# SUPPLEMENT.

## PRIONOSCIRTES (p. 602).

2. **Prionoscirtes nigripennis.**

Rotundate, convex, shining ; rufo-testaceous, the eyes and elytra black, the apex of the latter narrowly and the antennæ and legs testaceous ; finely pubescent, the pubescence fuscous on the dark portion of the elytra and yellowish elsewhere. Head and prothorax sparsely, exceedingly minutely punctate ; antennæ about two-thirds the length of the body, the joints from the fourth rather slender and diminishing in length, parallel in their outer half ; scutellum and elytra thickly, finely punctate ; legs short and stout, the tibiæ broad and compressed.

Length 3, breadth 2 millim. (♀.)

*Hab.* GUATEMALA, El Reposo (*Champion*).

One female example, in perfect condition. Differs from *P. saltitans* in its much broader form, more slender antennæ (the first joint similarly formed), stouter legs (the tibiæ especially), and black elytra, the apical margin only of the latter being pale.

## SCIRTES (p. 606).

**Scirtes angustatus** (p. 616).

In the description of this insect, based upon two females from David and a male from Caldera, I accidentally omitted to notice the sexual characters, which are very similar to those of some of the Central-American species of *Cyphon* (*C. bifoveolatus*, &c.):—

♀. Elytra each with a large rugulose depression immediately before the apex.
♂. Fifth ventral segment arcuate-emarginate at the apex.

One of the two female specimens from David has an additional oblong depression on each elytron close to the suture (perhaps accidental), a little in front of the other.

Three more examples have since been seen, two males and a female, from the Island of Grenada (*H. H. Smith*).

# APPENDIX.

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## Fam. BUPRESTIDÆ *.

In order to make this Work as complete as possible, the following list of species described from our fauna since 1889 has been compiled, and some synonymical notes and descriptions of two new species are added.

### PSILOPTERA, Sol.

*Psiloptera* (*Lampetis*) *auropunctata*, Kerr. Ann. Soc. Ent. Belg. 1893, p. 507. Mexico.

### BUPRESTIS, Linn.

*Buprestis jimenezi*, Dugès, La Nat. (2) ii. p. 7, t. 1. figg. 10, 10 *a* (1891). Jalapa, Mexico
This is undoubtedly *B. cotoxantha*, Gory.

### MELANOPHILA, Eschsch.

*Melanophila nigra*, Dugès, La Nat. (2) ii. p. 8, t. 1. figg. 11, 11 *a–c*. Tupataro, Mexico.
This is probably *M. atra*, Waterh.

### THRINCOPYGE, Lec.

*Thrincopyge marginata*, Waterh. Ann. & Mag. Nat. Hist. (6) v. p. 218 (1890).
Durango, Mexico.

### ACMÆODERA, Eschsch.

*Acmæodera mœsta*, Dugès, La Nat. (2) ii. p. 11, t. 1. fig. 17. Guanajuato, Mexico.

„ *jucunda*, Dugès, loc. cit. p. 14, t. 1. fig. 20. Acapulco, Mexico.
Almost certainly *A. impluviata*, Mann.

„ *sinaloensis*, Dugès, loc. cit. p. 14, t. 1. fig. 21. Sinaloa, Mexico.

### CHRYSOBOTHRIS, Eschsch.

*Chrysobothris sobrina*, Dugès, La Nat. (2) ii. p. 19, t. 1. fig. 26. Guanajuato, Mexico.
This seems to be *C. quadriplagiata*, Waterh.

„ *armata*, Dugès, loc. cit. p. 19, t. 2. fig. 29. Chiapas, Mexico.

„ *ignota*, Dugès, loc. cit. p. 20, t. 2. fig. 30. Guanajuato, Mexico.

* By C. O. Waterhouse.

## TRYPANTIUS, Waterh.

By an unfortunate slip of the pen this genus appears on p. 186 under the name *Trypanidius*, and on Tab. IV. as *Tripanidius*. The error was not discovered when the following species was described.

*Trypantius flohri*, Waterh. ——— Navarrete, Mexico.

*Trypanidius flohri*, Waterh. Ann. & Mag. Nat. Hist. (6) v. p. 219 (1890).

Several specimens of this pretty species have also been received from Santiago Ixcuintla in Jalisco (*Flohr*).

## PARADOMORPHUS, Waterh.

The following new species must be added to this genus:—

### **Paradomorphus flohri**, sp. n.

Elongatus, sat latus, cyaneus, pubescens; elytris aureo-cupreis, plaga elongata cyanea ornatis. Long. 4 lin.

*Hab.* Mexico, Canelas in Durango (*Flohr*).

Near *P. biplagiatus*, Waterh. (*anteà*, p. 55), but larger, more robust, and rather differently coloured. It is of a pale steel-blue colour, sparingly clothed (except on the elytra) with very short whitish pubescence. Head closely punctured, longitudinally impressed in front. Thorax rather broad, moderately convex, covered with rather coarse wavy confluent rugæ; the disc is gently convex in front, vaguely impressed posteriorly; the ridge at the posterior angle is very indistinct. Scutellum almost smooth, blackish. Elytra subparallel for half their length, then distinctly widened, and then obliquely narrowed to the apex; rather coarsely granulate, shining, obscure golden-coppery, with a dark steel-blue patch extending from near the base to the apex, leaving the margins coppery. The sutural area is flattened, so that the lateral half of each elytron is slightly raised. On the under flanks of the prothorax the pubescence is very dense and obscure yellow. The abdomen is closely and coarsely punctured. The basal joint of the posterior tarsi is a little longer than the second joint.

## AGRILUS, Steph.

*Agrilus deborrei*, Dugès, La Nat. (2) ii. p. 24, t. 2. fig. 36. Leon, Mexico.
*borrei*, Kerr. Mém. Soc. Ent. Belg. i. p. 249.

„ *metallescens*, Dugès, loc. cit. p. 26, t. 2. fig. 39. Guanajuato, Mexico.

„ *bimaculatus*, Dugès, loc. cit. p. 26, t. 2. fig. 40. Guanajuato, Mexico.

„ *rubrovittatus*, Dugès, loc. cit. p. 28, t. 2. fig. 44. Tupataro, Mexico.
This appears to be *Engyaulus rubrovittatus*, Waterh.

„ *caliginosus*, Dugès, loc. cit. p. 29, t. 2. fig. 46. Tupataro, Mexico.

„ *igneosignatus*, Dugès, loc. cit. p. 29, t. 2. figg. 47, 47 *bis*. Tupataro, Mexico.

*Agrilus cupreomaculatus*, Dugès, loc. cit. p. 30, t. 2. fig. 48. Tupataro, Mexico.
„ *fraternus*, Dugès, loc. cit. p. 31, t. 2. fig. 49. Tupataro, Mexico.
„ *tupatarensis*, Dugès, loc. cit. p. 31, t. 2. figg. 50, 50 *bis*. Tupataro, Mexico.
„ *consobrinus*, Dugès, loc. cit. p. 32, t. 2. fig. 51. Tupataro, Mexico.
„ *kerremansi*, Dugès, loc. cit. p. 32, t. 2. fig. 52. Tupataro, Mexico.
„ *purpurascens*, Kerr. Mém. Soc. Ent. Belg. i. p. 269.
*purpureus*, Dugès, La Nat. (2) ii. p. 32, t. 2. fig. 53 (nec Thunb.). Guanajuato, Mexico.
„ *tarrascus*, Dugès, loc. cit. p. 33, t. 2. fig. 54. Michoacan, Mexico.
„ *alemani*, Dugès, loc. cit. p. 33, t. 2. fig. 55. Moroleon, Mexico.
„ *nanus*, Dugès, loc. cit. p. 33, t. 2. fig. 56. Tupataro, Mexico.
„ *carmineus*, Dugès, loc. cit. p. 34, t. 2. fig. 57. Tupataro, Mexico.
„ *novus*, Dugès, loc. cit. p. 34, t. 2. fig. 58. Tupataro, Mexico.
„ *chlorus*, Dugès, loc. cit. p. 35, t. 2. fig. 59. Tupataro, Mexico.
„ *bucolicus*, Kerr. Ann. Soc. Ent. Fr. 1894, p. 419. Mexico.
„ *subobtusus*, Kerr. loc. cit. p. 415. Mexico.
„ *patruelis*, Kerr. loc. cit. p. 415. Mexico.
„ *tacitus*, Kerr. loc. cit. p. 416. Mexico.
„ *demissus*, Kerr. loc. cit. p. 416. Mexico.
„ *fugax*, Kerr. loc. cit. p. 417. Mexico.
„ *percarus*, Kerr. loc. cit. p. 418. Mexico.
„ *mentitus*, Kerr. loc. cit. p. 418. Mexico.

## TAPHROCERUS, Sol.

*Taphrocerus leoni*, Dugès, La Nat. (2) ii. p. 35, t. 2. figg. 61, 61 *a*.
Leon, Tupataro, and Morelia, Mexico.
„ *kerremansi*, Dugès, loc. cit. p. 35, t. 2. figg. 62, 62 *a*. Tupataro, Mexico.

## BRACHYS, Sol.

*Brachys chapuisi*, Dugès, La Nat. (2) ii. p. 36, t. 2. fig. 63. Tupataro, Mexico.
„ *hexagonalis*, Dugès, loc. cit. p. 36, t. 2. fig. 64. Guanajuato, Mexico.

## MICRASTA.

Kerremans, Ann. Soc. Ent. Belg. 1893, p. 115, nota.

*Micrasta typica*, Kerr. loc. cit. p. 115 nota. Mexico.
„ *cyanipennis*, Kerr. loc. cit. p. 115 nota. Mexico.

*Micrasta amplithorax*, Kerr. loc. cit. p. 115 nota. Mexico.
„ *meligethoides*, Kerr. loc. cit. p. 116 nota. Mexico.

LIUS, Deyr.

*Lius amabilis*, Kerr. Ann. Soc. Ent. Belg. 1896, p. 329. Mexico.
„ *æneus*, Kerr. loc. cit. p. 330. Mexico, Venezuela.

PACHYSCHELUS, Sol.

*Pachyschelus bicolor*, Kerr. Ann. Soc. Ent. Fr. 1894, p. 420. Mexico.
„ *carmineus*, Kerr. loc. cit. p. 420. Mexico.
„ *albopictus*, Kerr. loc. cit. p. 421. Mexico.
„ *solitarius*, Kerr. loc. cit. p. 421. Mexico.

LEIOPLEURA, Deyr.

*Leiopleura lata*, Kerr. Ann. Soc. Ent. Fr. 1894, p. 422. Mexico.
„ *minuta*, Kerr. loc. cit. p. 422. Mexico.
„ *levis*, Kerr. loc. cit. p. 422. Mexico.
„ *inæqualis*, Kerr. loc. cit. p. 423. Mexico.
„ *nitidicollis*, Kerr. loc. p. 423. Mexico.

The following species of this genus appears to be undescribed :—

**Leiopleura beltii,** sp. n.

Oblongo-ovalis, lata, nitidissima ; capite aureo-viridi, subtiliter sat crebre punctato, medio leviter sulcato ; thorace aureo-viridi, antice angustato, medio leviter convexo, parce subtiliter punctulato, vitta cupreo-purpurea ornato, lateribus sat deplanatis, rugulosis ; scutello nigro, lævi ; elytris cupreis, fulgentibus, sat crebre evidenter punctatis, lateribus bi-impressis, marginibus violaceis ; corpore subtus nigro, nitido.

Long. $1\frac{4}{5}$ lin.

*Hab.* Nicaragua, Chontales (*Belt*).

This beautiful species is nearest to *L. contigua*, Waterh. (*anteà*, p. 154), but it is larger and rather broader, and quite differently coloured from this and all the other members of the genus known to me. The purple band on the disc of the thorax is narrow in front, a little wider than the scutellum at the base. The punctuation of the elytra is moderately strong : the punctures are unequal in size, and not very close together.

Since the publication of Dr. Horn's Enumeration of the Throscidæ and Eucnemidæ, *anteà*, pp. 193–257 (1890), a few additional Eucnemidæ have been detected in the collections under examination, and one species of each family has been described by M. Fleutiaux. These are as follows :—

## Fam. THROSCIDÆ *.

AULONOTHROSCUS (p. 208).

### 4. Aulonothroscus mexicanus.

*Aulonothroscus mexicanus,* Fleut. Ann. Soc. Ent. Belg. 1895, p. 159[1].

*Hab.* Mexico [1].

Found in Paris in imported Mexican tobacco.

## Fam. EUCNEMIDÆ *.

CEROPHYTUM (p. 213).

### Cerophytum fuscicorne (p. 213).

To the localities given, add :—Nicaragua, Chontales (*Belt*).

A single mutilated example (without antennæ) from Chontales probably belongs here. It is ferruginous in colour, with the elytra, legs, and abdomen testaceous.

ANISCHIA (to follow the genus *Cerophytum*, p. 213).

*Anischia,* Fleutiaux, Mém. Soc. Zool. Fr. 1896, p. 300.

Head deflexed, very deeply sunk into the prothorax, rather convex, narrowed in front for the insertion of the antennæ, widening again below this, and with a very small, free labrum, the epistoma arcuate-emarginate in front, the mouth placed beneath, the mouth-parts hidden by the broad, prominent chin-piece of the prosternum ; eyes rounded, rather large, and partly hidden beneath the anterior margin of the prothorax ; maxillæ with two lobes ; apical joint of the maxillary palpi long and narrow, somewhat cultriform, nearly as long as the second and third joints united ; mandibles bifid ; antennæ cylindrical, stout, very long in the male, shorter in the female, 11-jointed, the first joint long and very stout, the second joint short and articulated to the first on the outer side before the apex, the apical joint very elongate ; prosternum broad, the sutures single and diverging anteriorly, the intercoxal portion margined laterally, rather wide, narrowing behind, and terminating in a long, truncated process, which is received into a deep notch in the mesosternum, the latter slightly declivous, with the borders of the cavity raised ; propleuræ without antennal grooves ; middle coxæ rather widely separated, without trochantin ; hind coxæ deeply inserted, widely separated, narrowing outwards, not laminate ; metasternal episterna very narrow ; legs rather short ; femora compressed and subclavate, slender at the base ; trochanters small ; tibiæ flattened and rather stout, slightly longer than the tarsi, without visible spurs ; tarsi 5-jointed, simple, sparsely clothed with fine hairs beneath, the joints 1–4 of the middle and hind pairs diminishing in length, the claw-joint long and slender, the claws simple ; prothorax short, with a sharply defined groove on either side at some distance from the outer margin and parallel with it, extending from the base to beyond the middle, the marginal carina fine and not visible from above ; scutellum oval, truncate in front ; elytra with a sutural stria only, the epipleuræ broad in their anterior third, becoming very narrow beyond the metasternum.

* By G. C. Champion.

This genus includes two species from Bolivia, and a third is now added from Central America. The above detailed description of the points of structure (which was prepared from *A. crassicornis* before the original description had been seen) will supplement that of M. Fleutiaux. *Anischia* seems to be an osculant form between the Eucnemidæ and Elateridæ. In the very small labrum (which cannot be properly seen till the mouth-parts are dissected) and the form of the head and antennæ it agrees with the Eucnemidæ, and in the other characters perhaps better with the Elateridæ. The species are of small size and somewhat resemble the smaller *Horistonoti*. Dr. Horn, when dealing with the Central-American Eucnemidæ, rejected *A. crassicornis* as an Elaterid; Dr. Candèze is of opinion that it is a Eucnemid.

### 1. **Anischia crassicornis.**

Moderately elongate, narrow, convex, shining, thickly clothed with rather long, yellowish-cinereous pubescence; piceous or obscure ferruginous, the legs testaceous or fusco-testaceous. Head thickly, finely punctate; antennæ about two-thirds the length of the body in the male, much shorter in the female, joint 1 as long as 2 and 3 united, 2 short, 3 nearly twice as long as 2, 4 much shorter than 3, 4–10 subequal in length, 11 nearly as long as 8–10 united and slightly acuminate at the tip, all the joints clothed with long hairs. Prothorax strongly transverse, convex, narrowed in front and behind, bisinuate at the base, rounded at the sides, the hind angles acutely produced backwards; the surface finely, rather sparsely punctate. Scutellum flat, minutely punctate. Elytra about two and one-half times the length of the prothorax, gradually narrowing from about the middle, and also a little narrowed in front, conjointly rounded at the apex; thickly, very finely, confusedly punctate, without trace of striæ, a very fine sutural one excepted. Anterior femora feebly subangularly widened on the inner side towards the base, and the anterior tibiæ broadly dilated on the inner side from about the middle to the apex, in the male.

Length $2\frac{2}{3}$–$3\frac{1}{10}$, breadth 1–$1\frac{1}{10}$ millim. (♂ ♀.)

*Hab.* Mexico, Motzorongo in Vera Cruz (*Flohr*); Guatemala, Pantaleon (*Champion*); Panama, Bugaba (*Champion*).

Seven examples. Allied to *A. boliviana*, Fleut., but differing from it in the transverse thorax and other particulars.

## FORNAX (p. 225).

### **Fornax castaneipennis** (p. 228).

Another specimen of this species has been found, from the same locality as the type, from which it differs in its much larger size (length $11\frac{1}{4}$ millim.), shorter and stouter antennæ, much darker elytra, and unimpressed fifth ventral segment. This second specimen, therefore, is, no doubt, a female and the type a male, not a female as supposed by Dr. Horn.

### 5 (A). **Fornax granulatus.**

Elongate, somewhat attenuate behind, convex, dull, the elytra moderately shining, thickly clothed with yellowish pubescence; piceous, the antennæ ferruginous, with the basal joint darker, the legs fusco-ferruginous. Head densely, rugosely punctured, with a distinct interocular ridge, the epistoma wider at the base than the space between it and the eye; antennæ extending to a little beyond

the hind angles of the prothorax, joint 2 short, about half the length of 4, 3 longer than 4 or 5, the latter equal, the outer joints gradually becoming longer. Prothorax broader than long, parallel in its basal half as seen from above, and arcuately narrowing in front; densely, rugosely punctured, with the interspaces raised; the base slightly longitudinally swollen in the middle and with a smooth very deep fovea on either side of this. Elytra moderately elongate, gradually narrowing from about the middle; distinctly striate, the interstices rugulosely punctate, becoming closely and very distinctly granulate towards the base. Antennal grooves deep, extending to the hind angles of the prothorax, about half the width of the propleural triangle. Intercoxal process of the prosternum gradually narrowing and ending in a laterally compressed blunt tooth. Epipleuræ deeply grooved in front. Fifth ventral segment abruptly narrowing from a little beyond the middle and produced at the apex into a laterally compressed obtuse tooth, the entire apex very coarsely punctured. First joint of the hind tarsi longer than the others united. Claws rectangularly dilated at the base.

Length 10, breadth $3\frac{1}{10}$ millim.

*Hab.* Mexico, Chiapas (*M. Trujillo*).

One example. Allied to *F. ventralis*, de Bonv., from Colombia, but differing from it in having two smooth deep foveæ at the base of the thorax, the epipleuræ grooved in front, the head with a distinct interocular carina, the body more parallel, &c. Amongst the Central-American species enumerated by Dr. Horn it comes nearest to *F. affinis*, de Bonv., from which it may be known by the less parallel prosternal process, the grooved epipleuræ, the distinct interocular carina, the more granulate elytra, and the form of the fifth ventral segment, this being perhaps a sexual character.

## PLESIOFORNAX (p. 232).

### Plesiofornax ligniperda (p. 234).

To the localities given, add:—Guatemala, Cerro Zunil (*Champion*).

De Bonvouloir's description appears to have been made from females only, the Mexican specimen in the Sallé collection being evidently of that sex. The male example from Cerro Zunil differs from this latter in having the antennæ very elongate —the sexes differing in this respect in the same way as the closely allied *P. pectoralis*, Horn—and the thorax much less rounded at the sides, narrowing from the base.

### Plesiofornax longicornis (p. 235).

To the locality given, add:—Costa Rica, Volcan de Irazu (*Rogers*).

A single female example of a *Plesiofornax* from Costa Rica probably belongs to this species, described from males only, differing from them in having the antennæ not more than one-half the length of the body, and the thorax a little more closely and more coarsely punctured. An additional male of *P. longicornis* has been found since Dr. Horn's description was published. The female measures $14\frac{1}{2}$ millim. in length.

## MICRORHAGUS (p. 246).

### 15. **Microrhagus horni.**

*Microrhagus horni*, Fleut. Ann. Soc. Ent. Belg. 1895, p. 166[1].

*Hab.* MEXICO[1].

Found in Paris in imported Mexican tobacco.

## CRYPTOSTOMA (to follow the genus *Arrhipis*, p. 255).

*Cryptostoma*, Latreille, Fam. Nat. p. 348 (1825); de Bonvouloir, Mon. Eucnem. p. 753; Horn, Trans. Am. Ent. Soc. 1891, p. 40*.

*Ceratogonys*, Perty, Del. Anim. Art. Bras. p. 24 (1830–1834).

*Basodonta*, Westwood, in Guérin's Spec. et Icon. des Anim. Artic. livr. ii. no. 8 (1843).

### 1. **Cryptostoma nigricorne.**

*Basodonta nigricornis*, Westw. loc. cit. tab. figg. 1–7[1].

*Cryptostoma nigricorne*, de Bonv. Mon. Eucnem. p. 758, t. 36. fig. 7[2].

*Hab.* NICARAGUA, Chontales (*Belt*).—COLOMBIA[1 2].

The single specimen received is fulvous red in colour, with the antennæ, the tibiæ, the three basal joints of the tarsi, and the greater part of the abdomen black. It differs from Westwood's description and figures in having the basal joint of the antennæ unarmed, and it is therefore probably a female. The insect appears to vary a good deal in colour.

## THYLACOSTERNUS (p. 257).

### 5. **Thylacosternus vittatus.**

Very elongate, narrow, cylindrical, moderately shining; head and antennæ black (the outer joints of the latter broken off); the prothorax testaceous, with a broad sinuous vitta on either side of the disc, extending from the base to near the apex and widening on the inner side posteriorly, and the anterior margin opposite the vittæ, black; the scutellum and elytra black, each elytron with two testaceous vittæ—one close to the suture and the other marginal, both nearly reaching the apex; the metasternum and abdomen in great part black; the femora flavous, with the apex piceous, the tibiæ black, the tarsi testaceous, with the lamellæ flavous; thickly pubescent, the pubescence on the upperside partaking of the ground-colour, pale beneath; the upper surface densely, finely punctate, the punctuation on the head coarser and more rugose, the shoulders of the elytra granulate. Prothorax transversely subquadrate, narrowed in front only, finely canaliculate down the middle behind and also with a transverse depression on the middle of the disc. Elytra feebly striate at the base.

Length 13, breadth $2\frac{1}{10}$ millim.

*Hab.* NICARAGUA, Chontales (*Janson*).

This species somewhat resembles *T. quadrivittatus* (Redt.) from Rio Janeiro, but it is much narrower, with the thorax and legs very differently coloured. It also approaches *T. rubricollis*, but has a more parallel thorax, as well as being differently coloured.

* Dr. Horn's description of the antennæ applies to the South-American *C. spinicorne* (Fabr.) only.

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[Names in small capitals refer to Families, &c.; those in roman type to the chief reference to each species included in the work; those in italics to species incidentally mentioned, synonyms, &c.]


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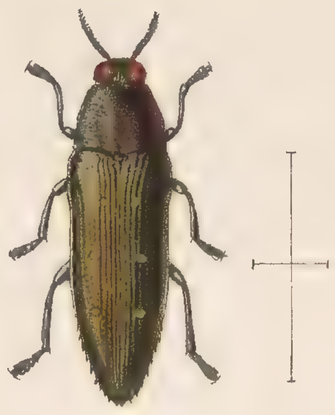
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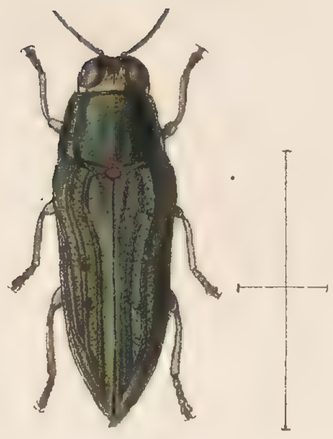

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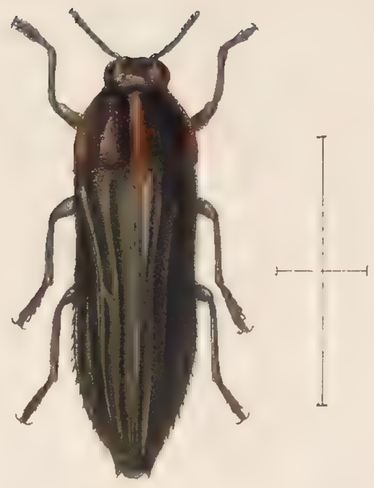
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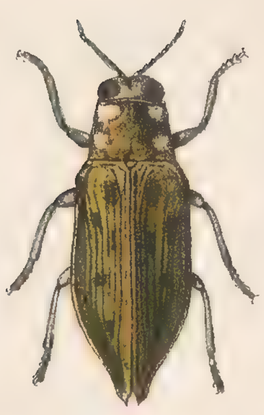
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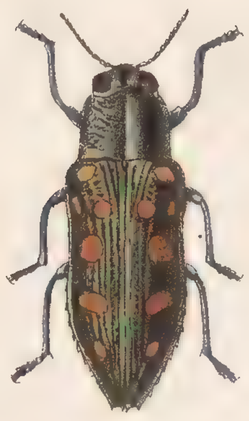
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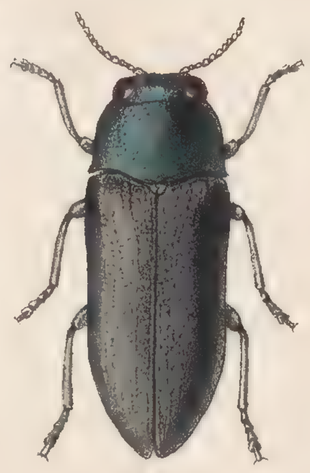
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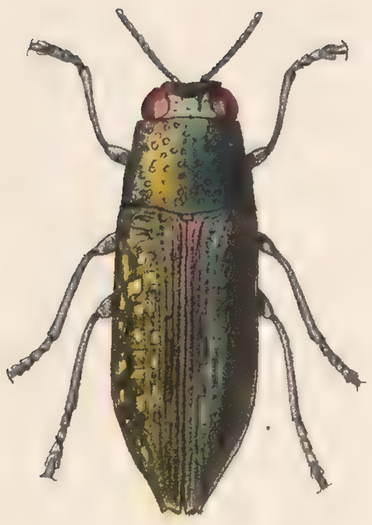
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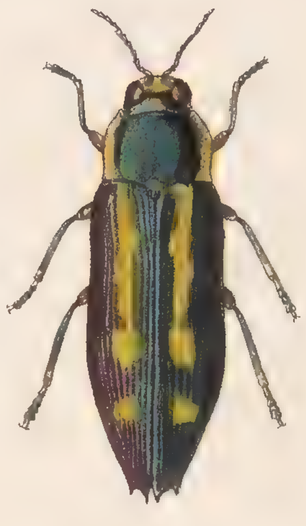
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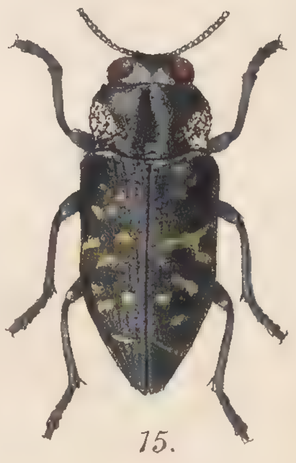
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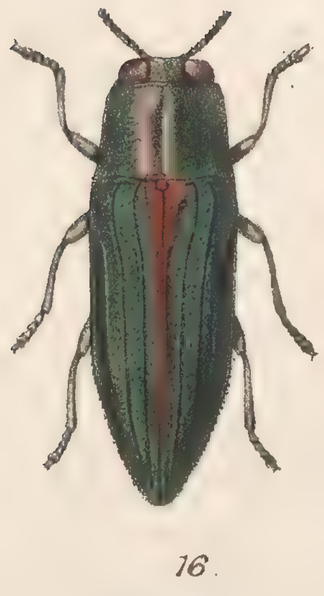
13.



14



15.



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17.



18.



19.



20.

1 CHALCOPHORA MEXICANA.
2 CHRYSESTHES TRIPUNCTATA.
3 „ AURONOTATA.
4 PELECOPSELAPHUS LATERALIS.
5 „ CHEVROLATII.
6 HALECIA BELTII.
7 „ CUPREOSIGNATA.

Edwin Wilson. lith.

8 TRACHYKELE BLONDELI.
9 HALECIA GUTTATA.
10 HIPPOMELAS SAGINATUS.
11 PSILOPTERA MONILIS.
12 DICERCA PROPINQUA.
13 BUPRESTIS CATOXANTHA.

14 DICERCA ÆNEOVARIA.
15 PSILOPTERA DILATICOLLIS.
16 AGÆOCERA GIGAS.
17 BUPRESTIS PILIVENTRIS.
18 MELANOPHILA VIRIDIOBSCURA.
19 CINYRA FRONTALIS.
20 „ COSTULATA.

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1.



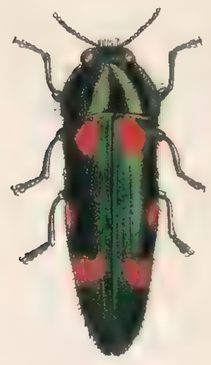
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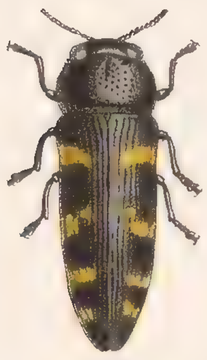
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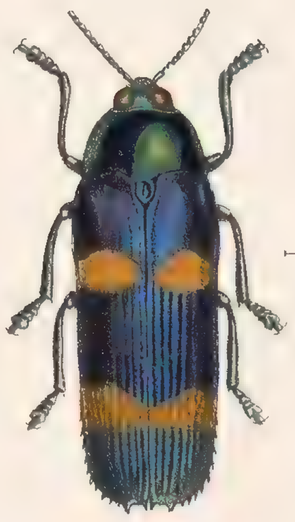
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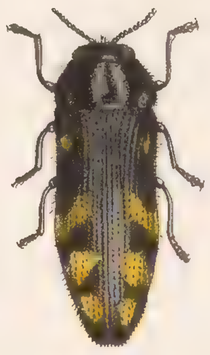
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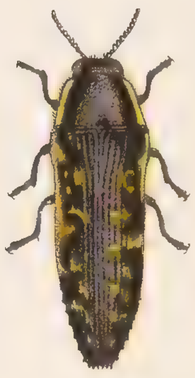
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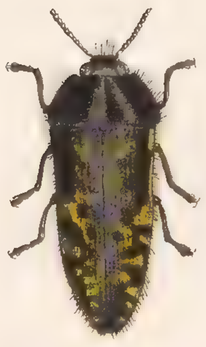
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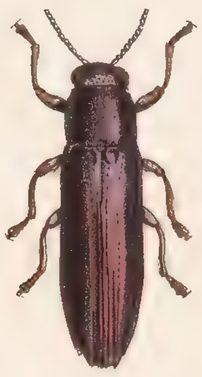
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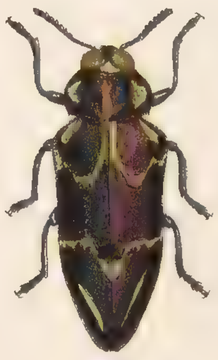
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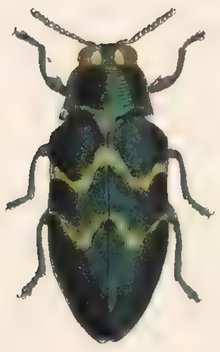
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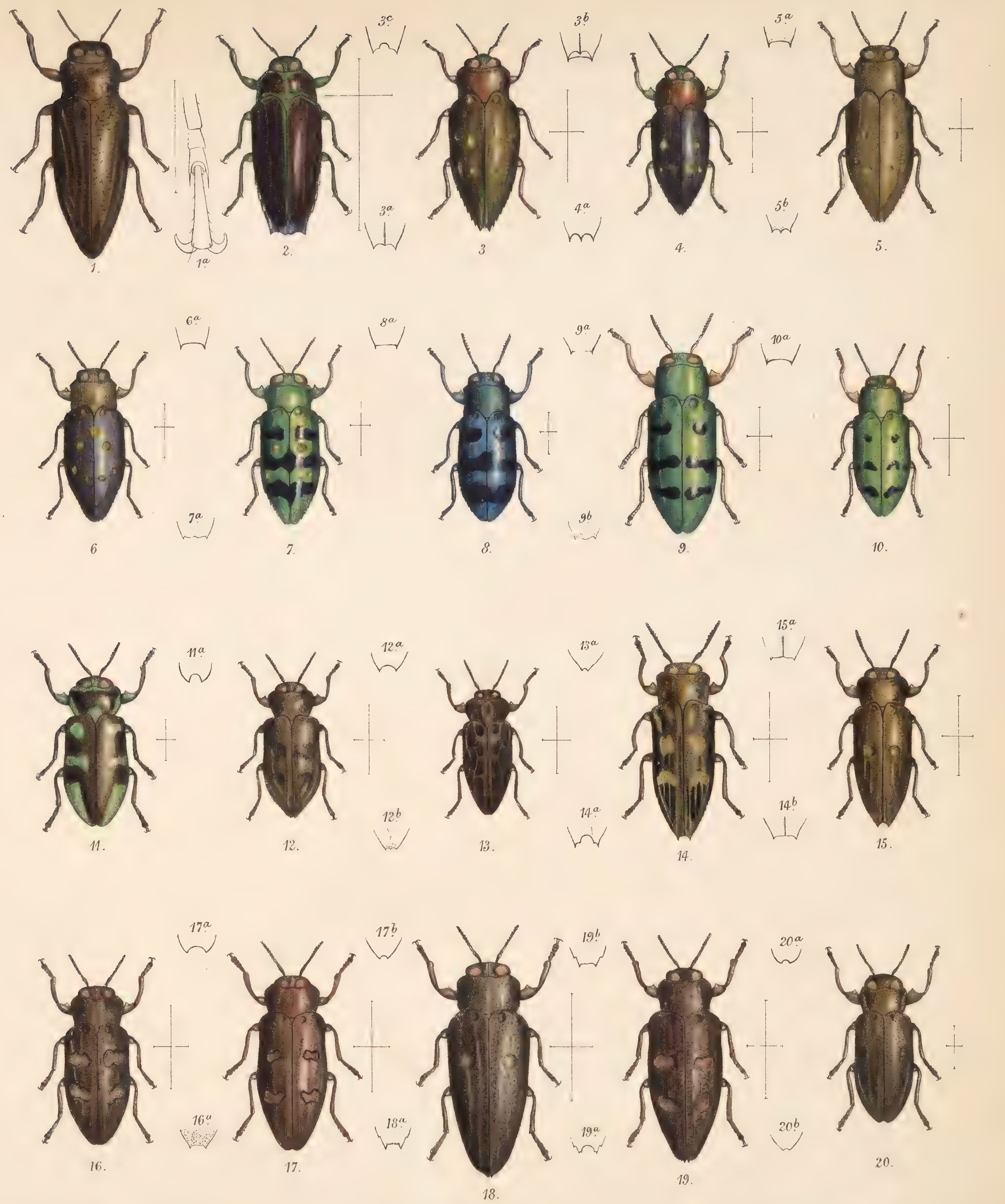


20.

1. TETRAGONOSCHEMA HUMERALIS.
2. ACMÆODERA REGULARIS.
3. CONOGNATHA OCTOGUTTATA.
4. ACMÆODERA FLAVOSPARSA.
5. „ SUPERBA.
6. „ PICTA.
7. „ EXILIS.
8. CONOGNATHA BIFASCIATA.
9. ACMÆODERA SETOSA.
10. „ STELLARIS.
11. „ LONGIPENNIS.
12. „ VENUSTA.
13. „ FLAVOSTICTA.
14. SPHENOPTERA PURPURASCENS.
15. ACTENODES FULGINEA.
16. „ BIFASCIATA.
17. „ LÆVIFRONS.
18. „ REICHEI.
19. „ HUMERALIS.
20 „ UNDULATA.

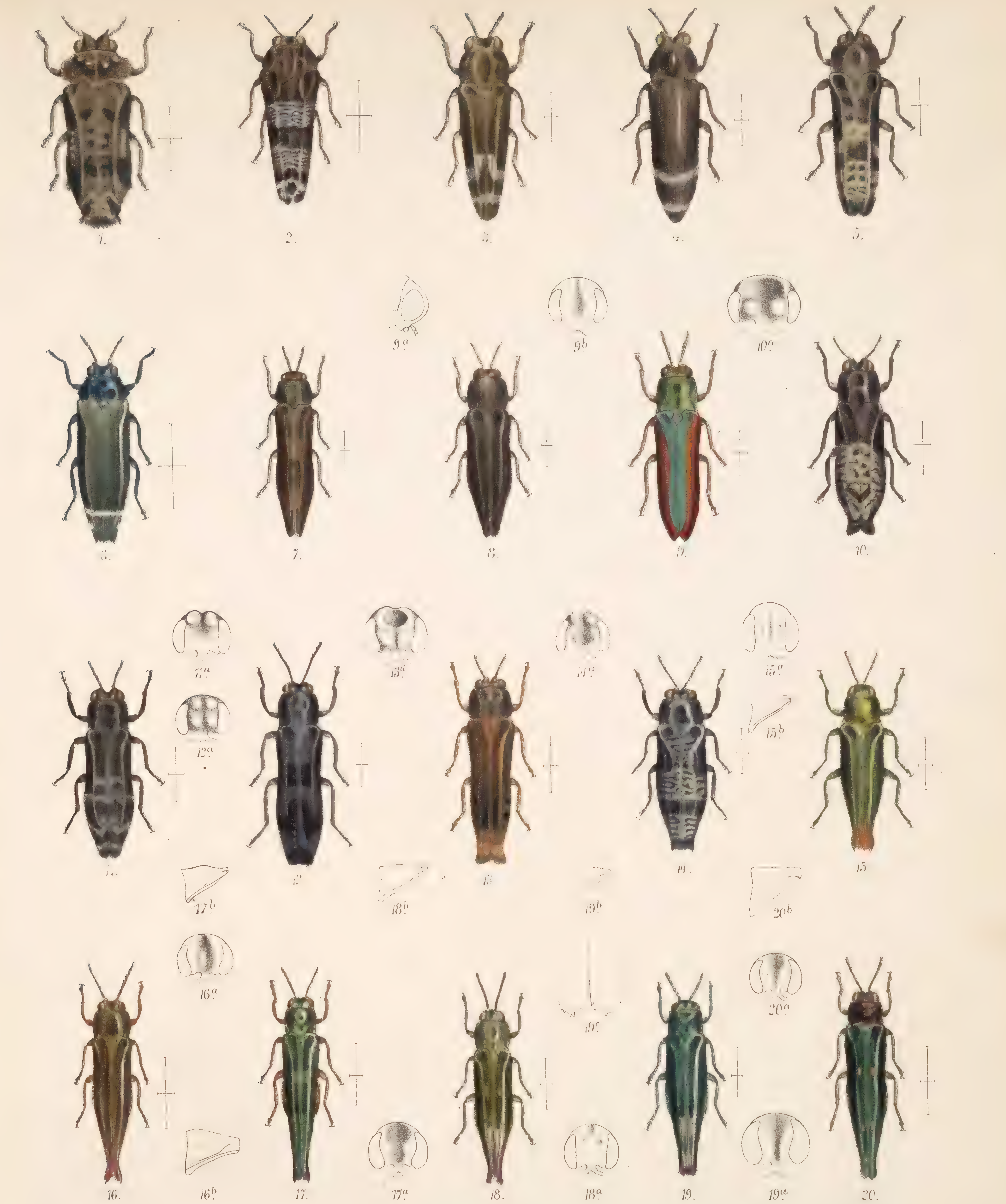
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Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8




1, 1a. CHALCANGIUM LONGIPENNE.
2. COLOBOGASTER PUNCTICOLLIS.
3, 3a–c CHRYSOBOTHRIS ICHTHYOMORPHA.
4, 4a ,, BELTI.
5, 5a, b. ,, ASTUTA.
6, 6a. ,, SALLÆI.
7, 7a. ,, CONVEXIUSCULA.
8, 8a. CHRYSOBOTHRIS JUNCTA.
9, 9a, b. ,, TRISIGNATA.
10, 10a ,, SOCIALIS.
11, 11a ,, TROCHILUS.
12, 12a, b. ,, GUATEMALENSIS.
13, 13a. ,, INÆQUALIS.
14, 14a, b. CHRYSOBOTHRIS ACUTIPENNIS.
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16, 16a. ,, QUADRIPLAGIATA.
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18, 18a. ,, STELLIFERA.
19, 19a, b. ,, COSTIFRONS.
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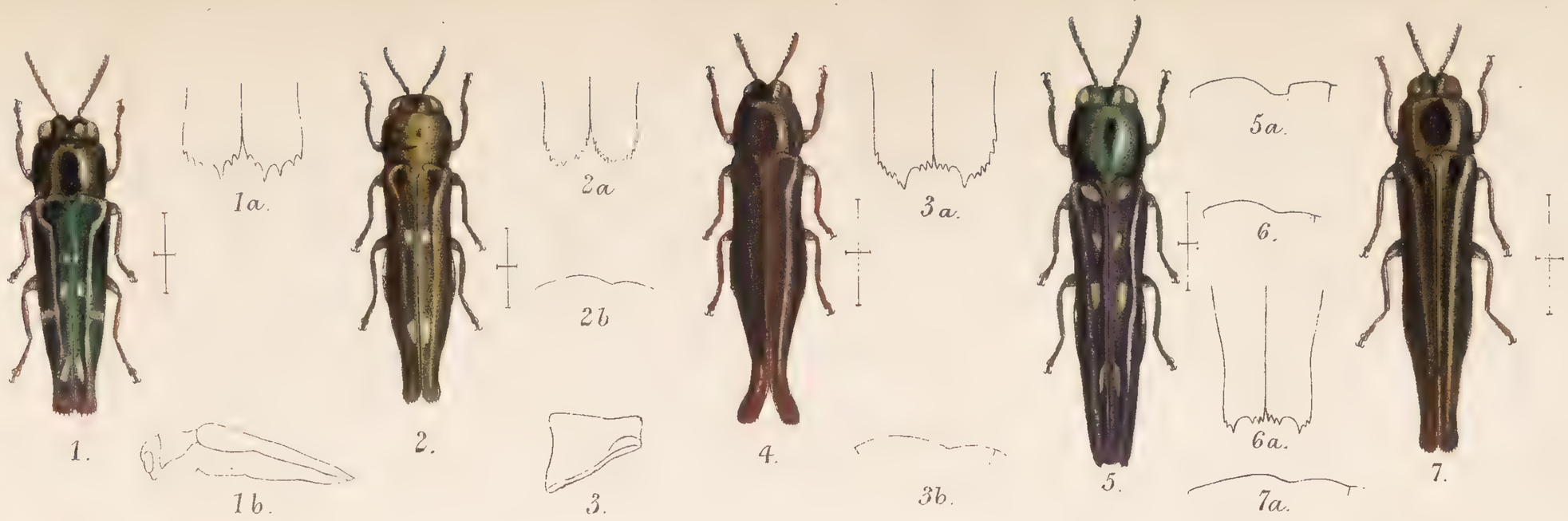
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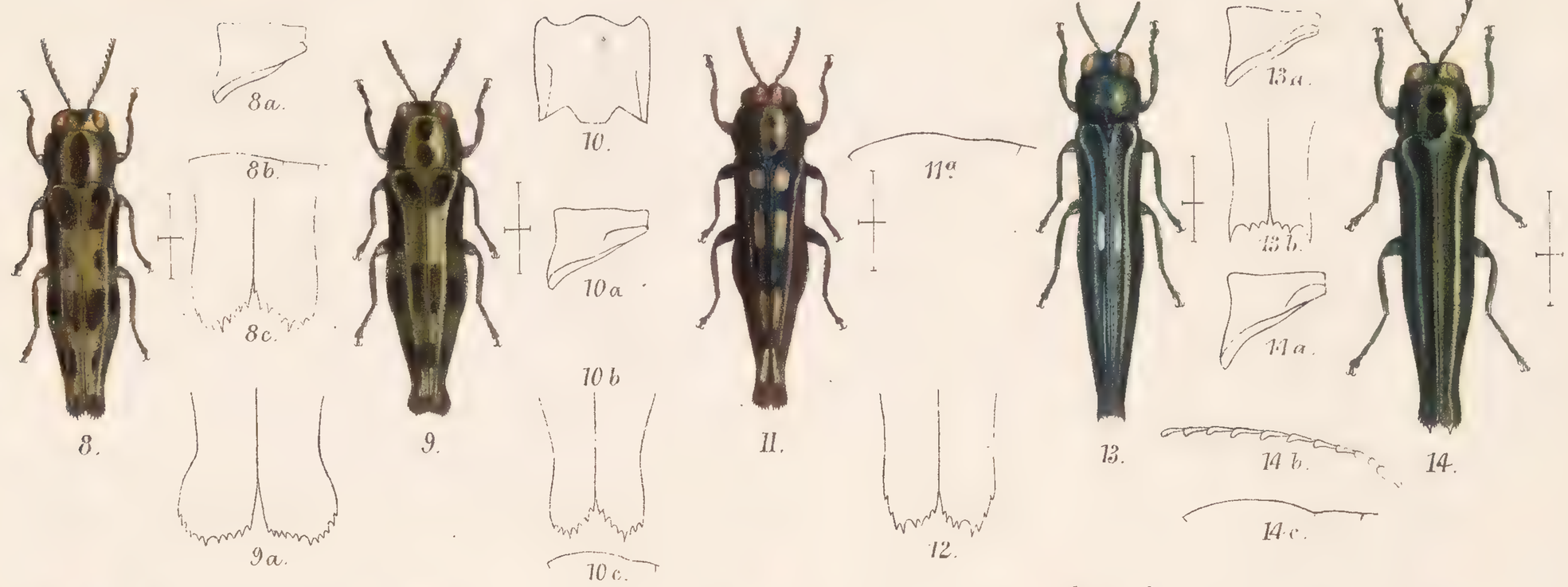


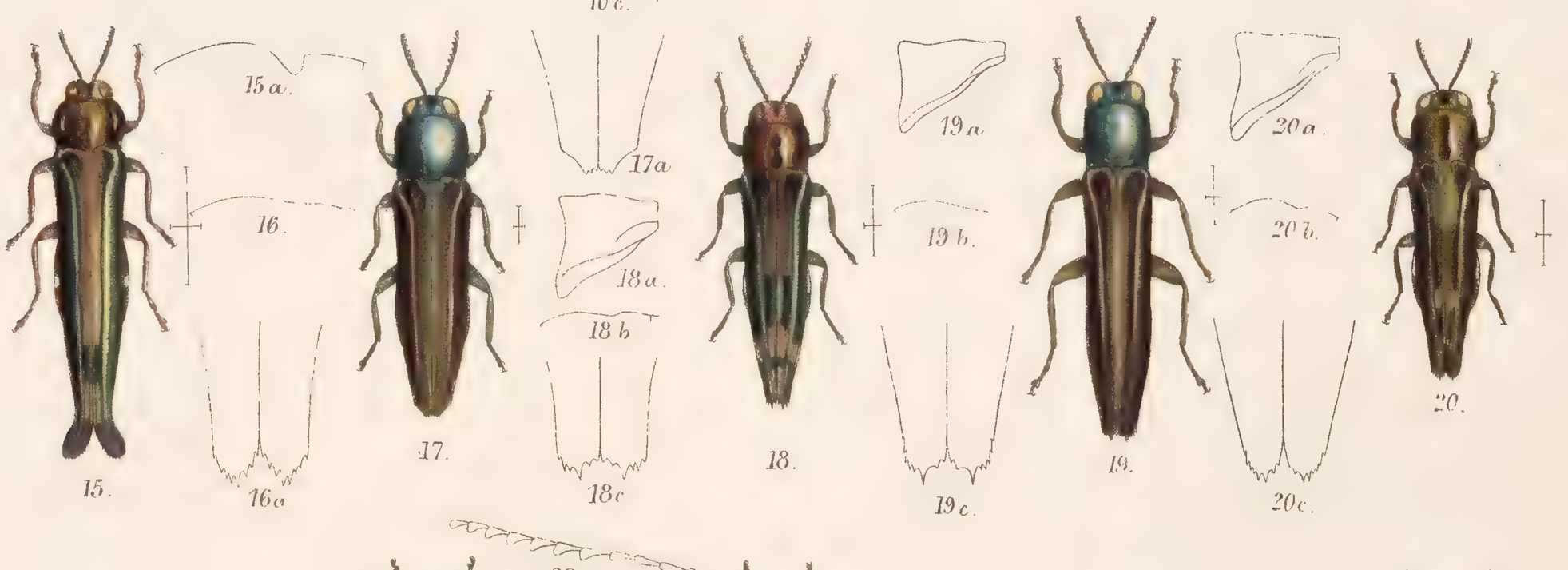
1. AMORPHOSOMA PENICILLATUM.
2. STENOGASTER COSTIFER.
3. TRIPANIDIUS INFREQUENS.
4. CYPHOTHORAX PALLEOLATUS.
5. OMOCHYSEUS TERMINALIS.
6. AUTARCONTES ABDOMINALIS.
7. PARADOMORPHUS OBSCUREGUTTATUS.
8. PARADOMORPHUS VERMICULATUS.
9, 9a, 9b, ENGYAULUS PULCHELLUS.
10, 10a. AGRILUS INÆQUALIS.
11, 11a. „ DIVERSUS.
12, 12a. „ VELUTINOMACULATUS.
13, 13a. „ EXUSTUS.
14, 14a. AGRILUS SODALIS.
15, 15a, 15b. „ ACUDUCTUS.
16, 16a, 16b. „ DIVARICATUS.
17, 17a, 17b. „ CHLOROCEPHALUS.
18, 18a, 18b. „ VITTULUS.
19, 19a, 19b, 19c. „ STRIGIFRONS.
20, 20a, 20b. „ SOCIALIS.

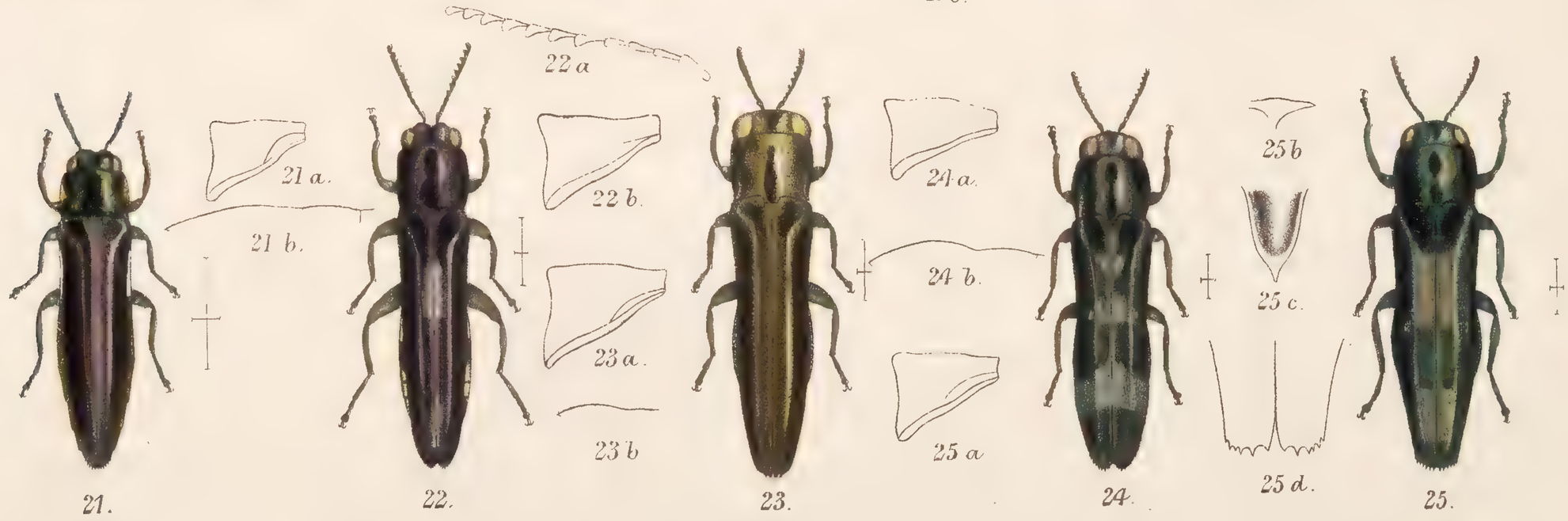
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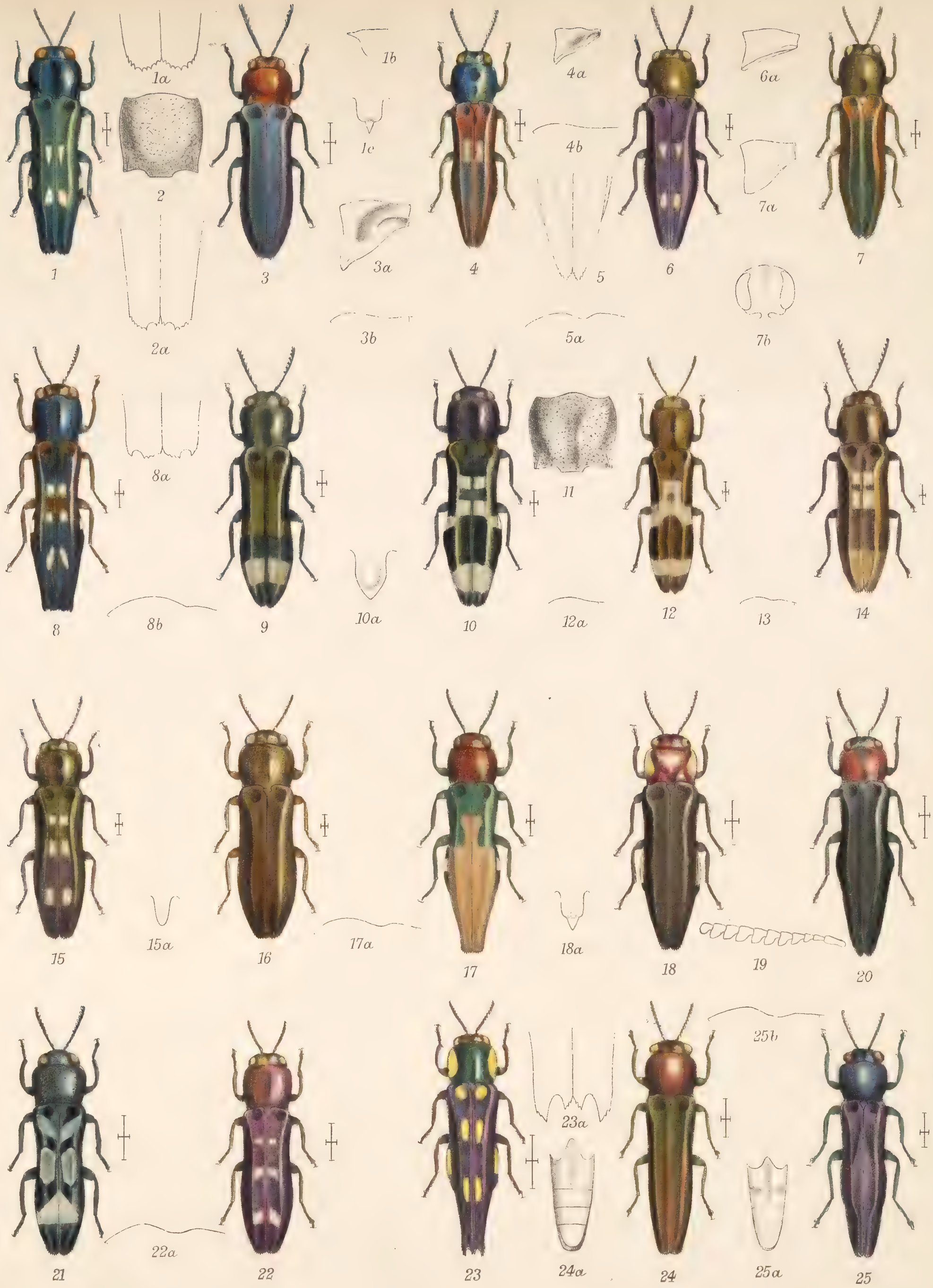




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1, 1a, b. | AGRILUS | INCLINATUS. | 9, 9a. | AGRILUS | LATICAUDATUS. | 18, 18a-c. | AGRILUS | BELLUS. |
| 2, 2a, b. | „ | DISTANS. | 10, 10a-c. | „ | SPARSUS. | 19, 19a-c. | „ | SPINICAUDATUS. |
| 3, 3a, b. | „ | CENTRALIS. | 11, 11a. | „ | ACICULATUS. | 20, 20a-c. | „ | MOLESTUS. |
| 4. | „ | BALÆNOIDES. | 12. | „ | LENTULUS. | 21, 21a, b. | „ | SUBLATERALIS. |
| 5, 5a. | „ | LÆTUS. | 13, 13a, b. | „ | DENTIFER. | 22, 22a, b. | „ | FEMORALIS. |
| 6, 6a. | „ | EXCISUS. | 14, 14a-c. | „ | MANATUS. | 23, 23a, b. | „ | CEPHALOTES. |
| 7, 7a. | „ | DISCOIDALIS. | 15, 15a. | „ | NITIDICOLLIS. | 24, 24a, b. | „ | TEMERATUS. |
| 8, 8a-c. | „ | CRIBRICOLLIS. | 16, 16a. | „ | DENTICULATUS. | 25, 25a-d. | „ | LÆTULUS. |
| | | | 17, 17a. | „ | OBSERVANS. | | | |

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Inches 1 2 3 4 5 6 7 8

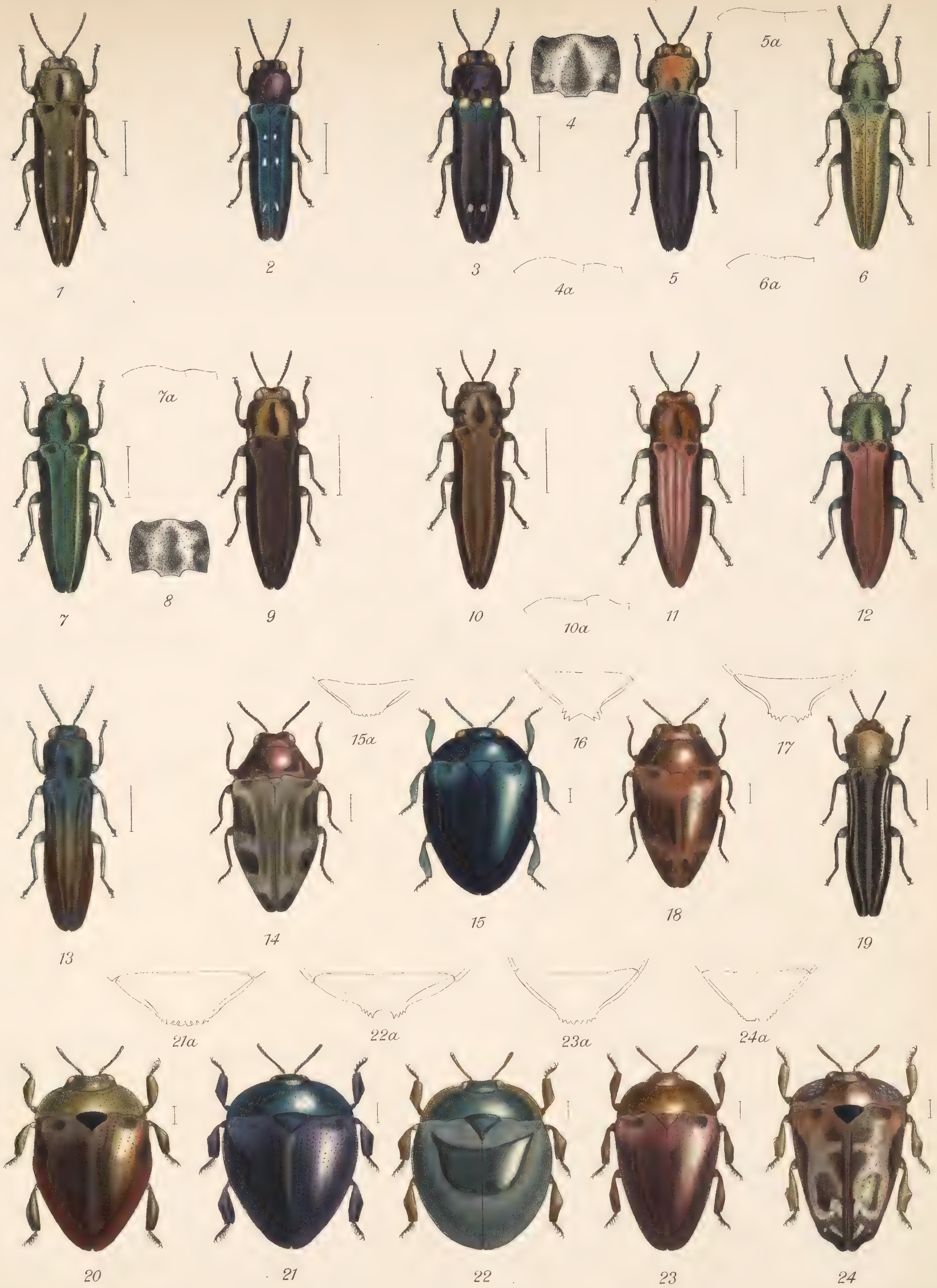



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|---|---|---|---|---|---|---|---|---|
| 1, 1a-c. | AGRILUS | CONSIMILIS. | 9. | AGRILUS | RATUS. | 18, 18a. | AGRILUS | SPISSUS. |
| 2, 2a. | „ | APICATUS. | 10, 10a. | „ | PULLULUS. | 19. | „ | PLANATUS. |
| 3, 3a,b. | „ | IGNOTUS. | 11. | „ | CONFUSUS. | 20. | „ | GRACILITARSIS. |
| 4, 4a,b. | „ | VIGILANS. | 12, 12a. | „ | ACCEPTUS. | 21.. | „ | SIGNATUS. |
| 5, 5a. | „ | SIMULANS. | 13. | „ | ACCLIVIS. | 22, 22a. | „ | ALBOFASCIATUS. |
| 6, 6a. | „ | SPECIOSUS. | 14. | „ | TEMPORALIS. | 23, 23a. | „ | CROCEOMACULATUS |
| 7, 7a,b. | „ | ASPERULUS. | 15, 15a. | „ | REFECTUS. | 24, 24a. | „ | STRIATIVENTRIS. |
| 8, 8a,b. | „ | BIEMARGINATUS. | 16. | „ | PARVUS. | 25, 25a,b. | „ | LATICEPS. |
| | | | 17, 17a. | „ | DIMIDIATUS. | | | |

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Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8



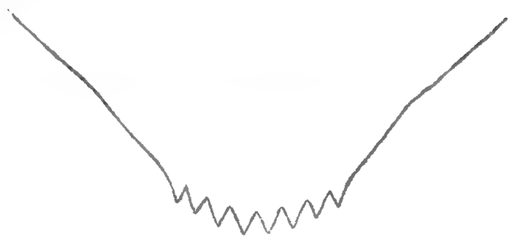

1 AGRILUS STELLATUS.
2. " SIMPLICICOLLIS.
3. " QUADRIMACULATUS
4. 4 a. " SEXMACULATUS
5. 5 a. " FOSSIGER.
6. 6 a. " AUREOVIRIDIS
7. 7 a " RESTRICTUS.
8 " DELECTABILIS.

9. AGRILUS BRUNNIPENNIS.
10, 10 a. " FOSSULATUS.
11. " QUADRICOSTATUS.
12. " SUBCOSTATUS.
13. " (?) DISSIMILIS.
14. BRACHYS SIMPLEX.
15. 15 a. PACHYSCELUS COMPACTUS
16. " DIVERSUS.

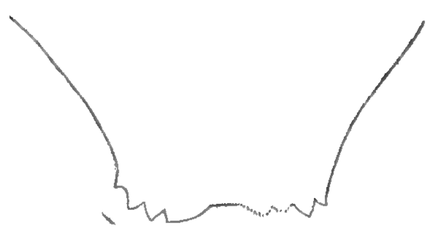
17 PACHYSCHELUS FULGENS
18. LIUS DISSIMILIS
19 PARAGRILUS ANGULATICOLLIS.
20. PACHYSCHELUS GRANULOSICOLLIS.
21, 21 a " NIGRICOLLIS.
22, 22 a. " LUNIFER.
23, 23 a " IRRORATUS.
24, 24 a. " TRAPEZOIDALIS.

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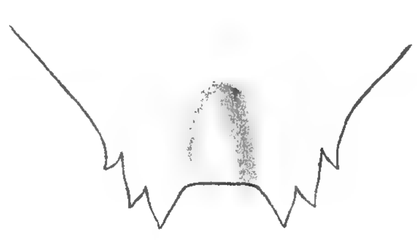
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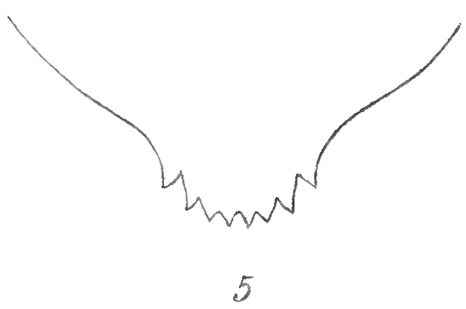
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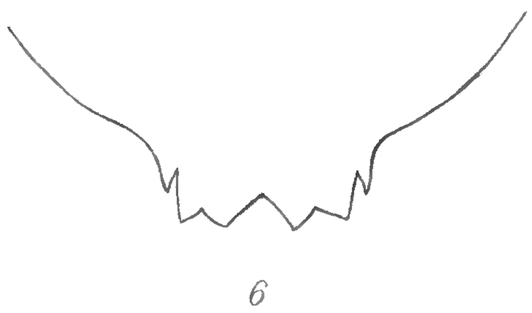
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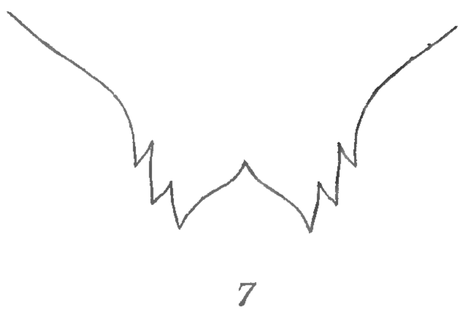
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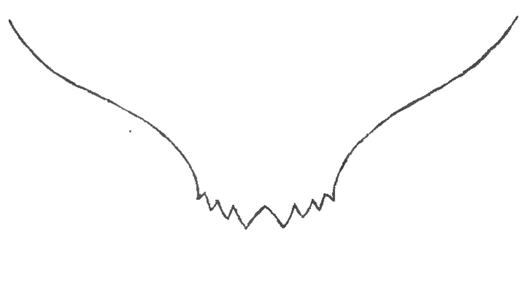
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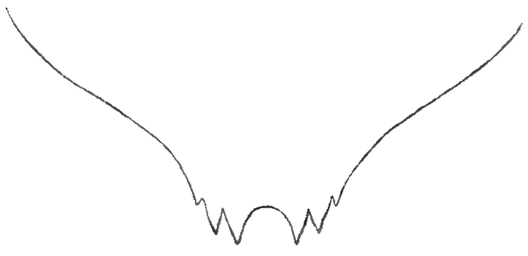
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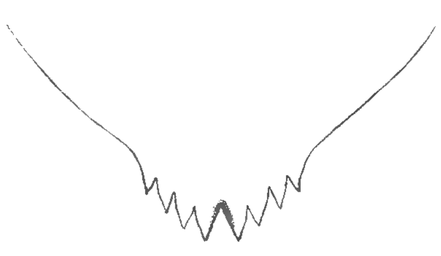
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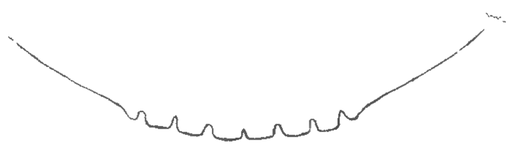
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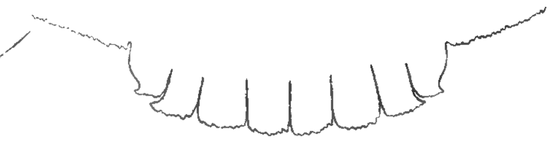
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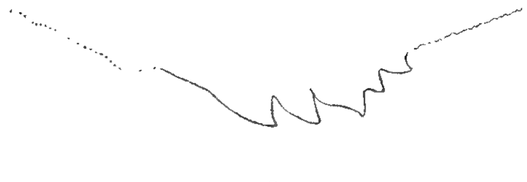
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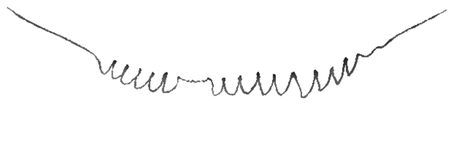
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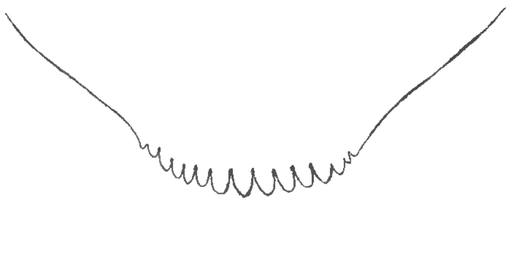
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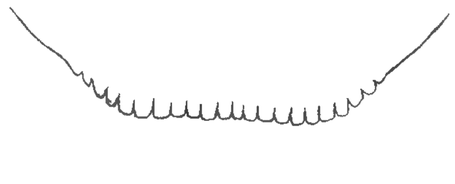
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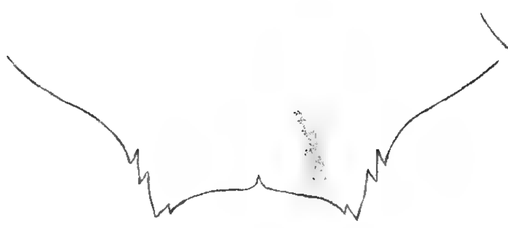
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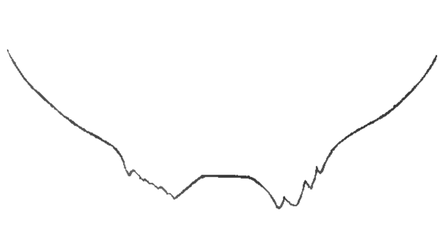
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17



18



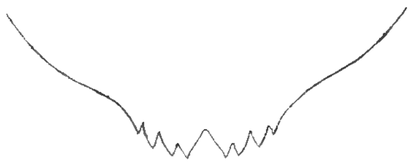
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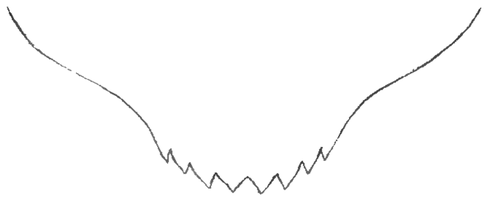
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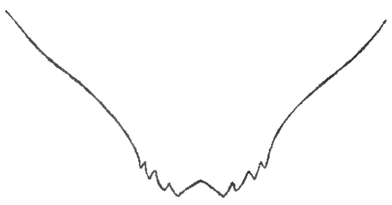
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22



23



24

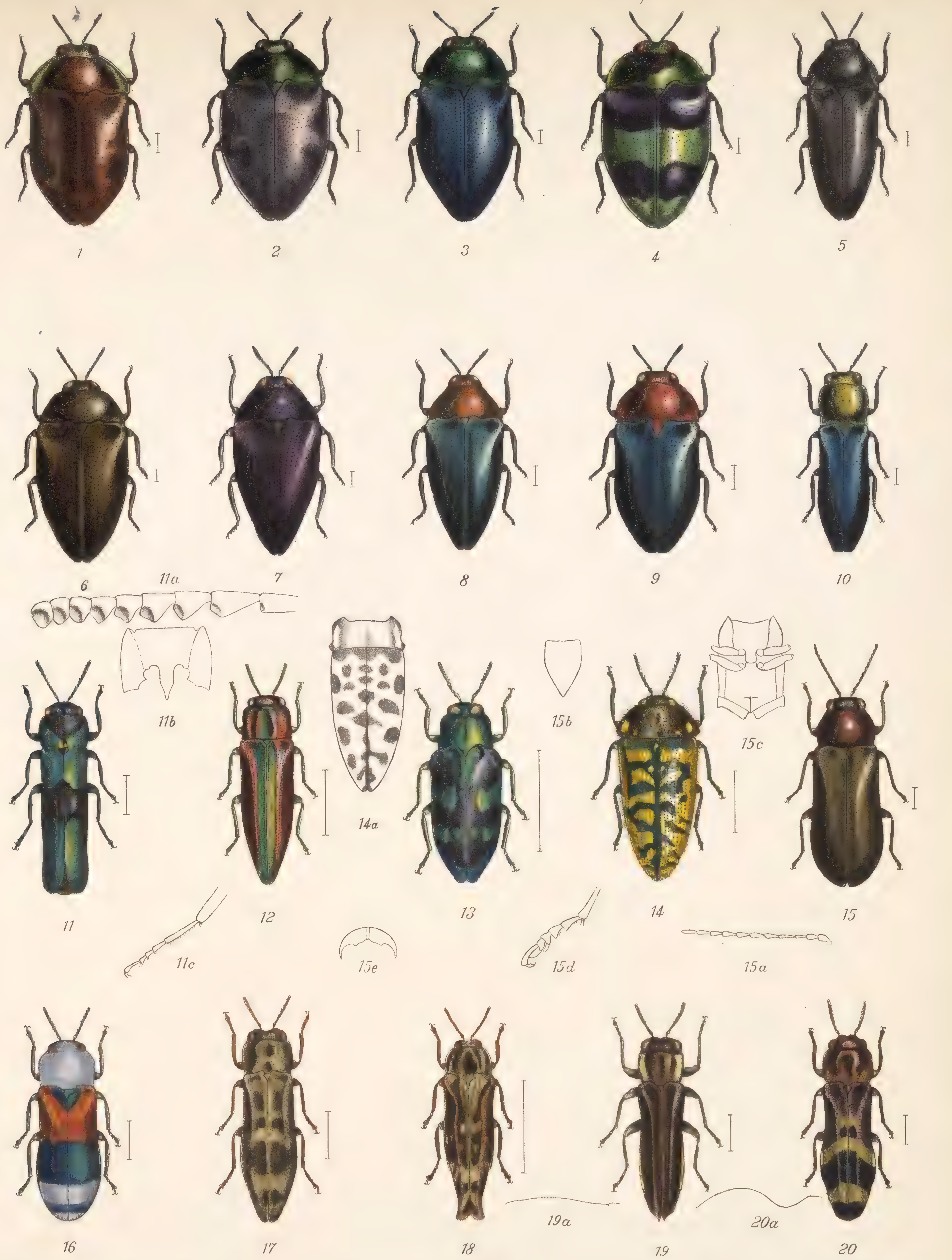
1. PACHYSCHELUS ARDENS.
2. " SECEDENS.
3. " COMMUNIS.
4. " INCERTUS.
5. " OCTODENTATUS.
6. " DUBIUS.
7. " AFFINIS.
8. " PURPUREIPENNIS.

9. PACHYSCHELUS FAMILIARIS
10. " ROBUSTUS.
11. " DISCOIDALIS.
12. " DEPLANATUS
13. " AVERSUS.
14. " MODESTUS.
15. " CINCTUS.
16. " LATICEPS.

17. PACHYSCHELUS SIGNATUS.
18. " UNDULATUS.
19. " BIFASCIATUS.
20. " ELEGANS.
21. " AZUREUS.
22. " BIGUTTATUS.
23. " STICTICUS.
24. " PUBICOLLIS.

Maud Horman Fisher del. et lith.

Lith. & Imp. Camb. Sci. Inst Co




1 LEIOPLEURA INTERMEDIA.
2 " CONTIGUA.
3 " CRASSA.
4 " PULCHRA.
5 " TRIVIALIS.
6 " CONVEXA.
7 " PARVULA.
8 LEIOPLEURA POLITA.
9 CALLIMICRA DIMIDIATA.
10 " ANGUSTULA.
11, 11 a-c ISOPHÆNUS PARALLELUS.
12 MIXOCHLORUS SUTURALIS.
13 CHRYSOBOTHRIS DELECTABILIS.
14, 14 a ACMÆODERA DELECTABILIS.
15, 15 a-e EXÆSTHETUS DASYTOIDES.
16 PARADOMORPHUS CARISSIMUS.
17 AGRILUS PILOSUS.
18 " CAVIFRONS.
19, 19 a " OBLITUS.
20, 20 a PARADOMORPHUS GIBBIFRONS.

Maud Horman Fisher del. et lith. [illegible]



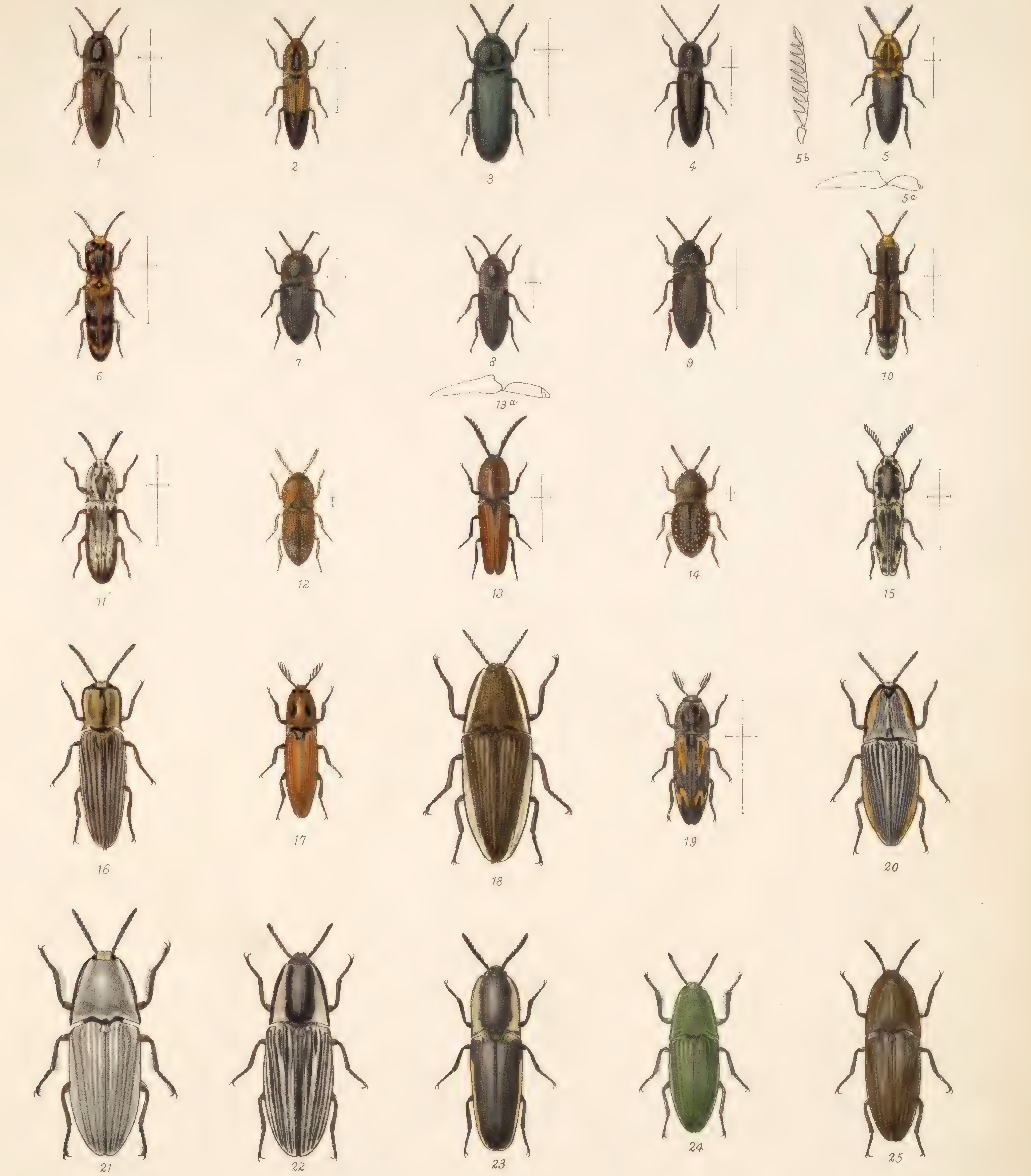
1 DRAPETES NIGER.
2 „ HÆMORRHOIDALIS.
3 „ PUNCTULATUS.
4 „ CINGULATUS.
5 „ TÆNIOLATUS.
6 LISSOMUS PILARIUS.
7 „ TRAPEZOIDEUS.
8 ISORHIPIS HOLOSERICEA.

9 GASTRAULACUS CAVIFRONS.
10 DROMÆOLUS VARIEGATUS.
11 „ ORNATULUS.
12 „ TRIPARTITUS.
13 PHÆNOBOLUS BICOLOR.
14 EURACHIS ELEGANS.
15 FORNAX ATRIPENNIS.
16 „ TRUNCATUS.

17, 17a DYSCOLOTAXIA CHAMPIONI.
18♀, 19♂ DIPHYTAXIS EXCAVATA.
20 HENECOSOMA DISCICOLLE.
21 PHLEGON VIDUUS.
22♂ MICRORHAGUS FRÆNATUS.
23♂ „ INSIDIOSUS.
24 ADELORHAGUS LATERALIS.
25 THYLACOSTERNUS DONATUS.

W. Purkiss lith.

Hanhart imp.
552.



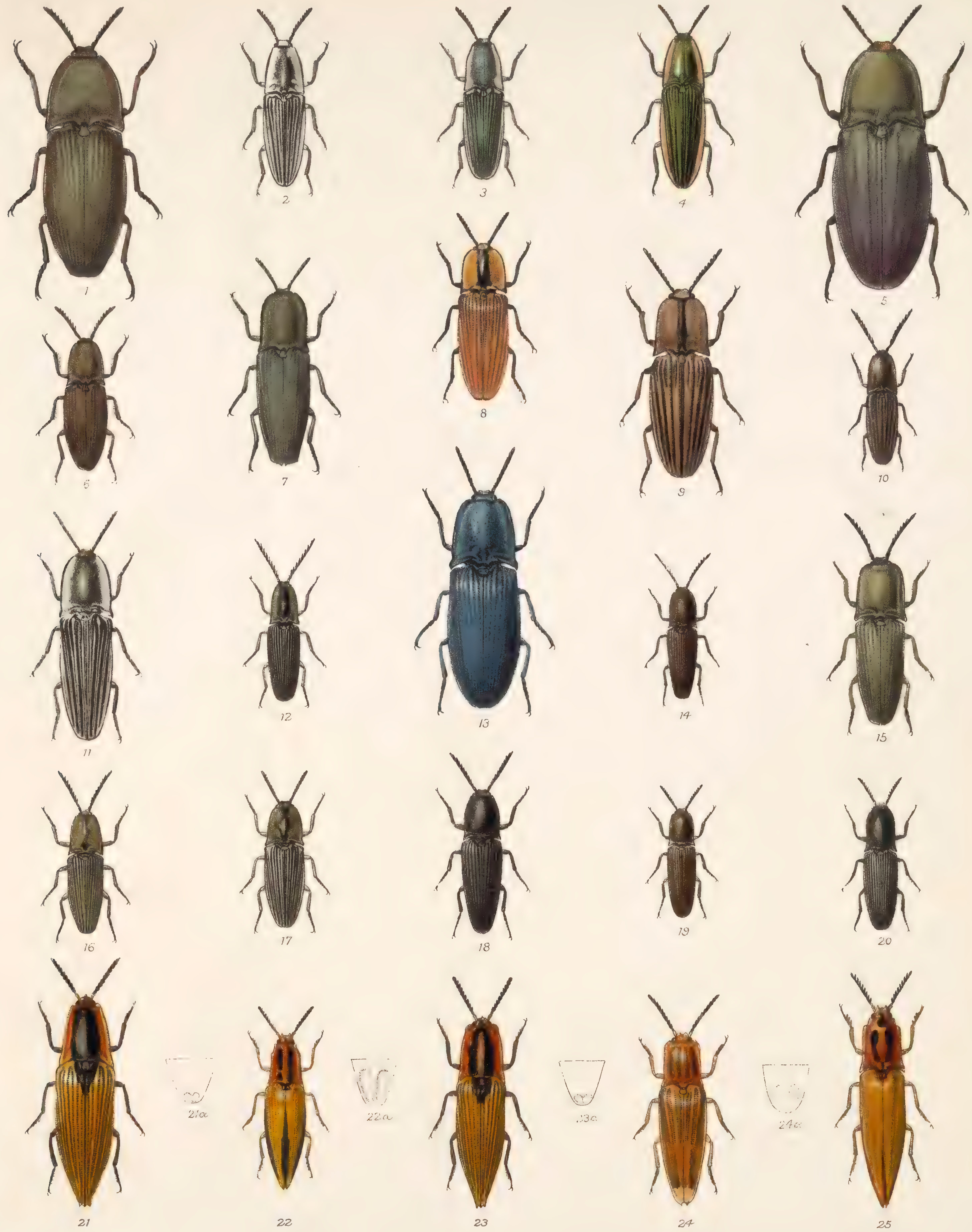
1. ADELOCERA MEXICANA.
2. " POLLINARIA.
3. " VIRIDIS.
4. ♂ " LONGICORNIS.
5, 5a, b, ♂ " PECTINICORNIS.
6. DILOBITARSUS INOPINUS.
7. LACON BREVIS.
8. " TRUQUII.

9. LACON PALEATUS.
10. DILOBITARSUS ELOINI.
11. ♀ ALAUS PLEBEJUS.
12. MERISTHUS SCOBINULA.
13, 13a, ♀ ALAUS SUTURALIS.
14. MERISTHUS SQUAMIGER.
15. ♀ ALAUS NIETOI.
16. CHALCOLEPIS LUCZOTI.
17. ♂ HEMIRHIPUS BIMACULATUS.

18. ♀ CHALCOLEPIDIUS LAFARGEI.
19. ♂ HEMIRHIPUS DECORUS.
20. ♀ CHALCOLEPIDIUS RUGATUS.
21. ♂ " " v. PISTORIUS.
22. ♀ " APPROXIMATUS.
23. ♀ " WEBBI.
24. ♂ " EXQUISITUS.
25. ♀ " SILBERMANNI.

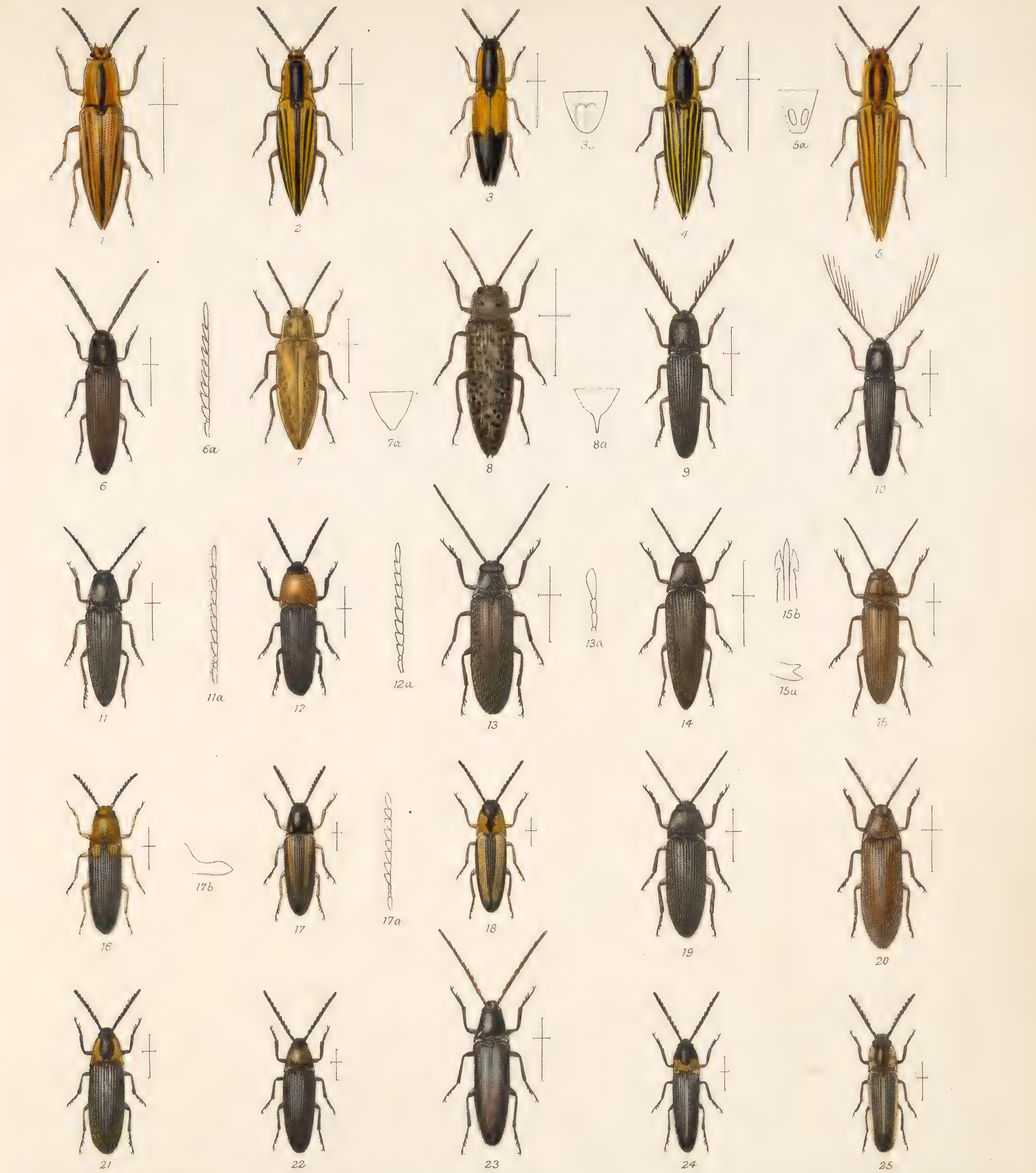
W. Purkiss lith.

Hanhart imp.
646.



| | | | |
|---|---|---|---|
| 1♀ | CHALCOLEPIDIUS | LACORDAIREI, *var.* | |
| 2♂ | » | VIRGINALIS. | |
| 3♀ | » | » , *var.* | |
| 4♀ | » | ANGUSTATUS. | |
| 5♀ | » | FORRERI. | |
| 6♂ | » | MURINUS. | |
| 7♀ | » | JANSONI. | |
| 8♀ | » | DESMARESTI, *var.* | |
| 9♂ | CHALCOLEPIDIUS | DESMARESTI. | |
| 10♂, 11♀ | » | MEXICANUS. | |
| 12♂ | » | BOUCARDI. | |
| 13♀ | » | JEKELI. | |
| 14♂ | » | CUNEATUS. | |
| 15♂ | » | OXYDATUS, *var.* | |
| 16♂ | » | RODRIGUEZI. | |
| 17♀ | » | » , *var.* | |
| 18♂ | CHALCOLEPIDIUS | ATTENUATUS. | |
| 19♀ | » | DUGESI. | |
| 20♀ | » | TENUIS. | |
| 21, 21a ♀ | SEMIOTUS | CUSPIDATUS. | |
| 22, 22a ♀ | » | LAFERTEI. | |
| 23, 23a ♀ | » | SPLENDIDUS. | |
| 24, 24a ♀ | » | LIGNEUS. | |
| 25♀ | » | INSIGNIS, *v.* LONGUS | |

W. Purkiss lith. Hanhart imp.



1♀ SEMIOTUS DOHRNI.
2♀ " " , *var.*
3,3a♀ " CHONTALENUS.
4♀ " SUPERBUS, *var.*
5,5a♀ " "
6,6a♂ DICREPIDIUS SERRATICORNIS.
7,7a♂ OISTUS SPHENOSOMUS.
8,8a♂ " CACICUS.
9♂ DICREPIDIUS CORVINUS.
10♂ " POLITUS.
11,11a♂ SPILUS CILIATICORNIS.
12,12a♀ SPILOMORPHUS RUBRICOLLIS.
13,13a♂ HETEROCREPIDIUS MEGALOPS.
14♂ ATRACTOSOMUS FUSIFORMIS.
15,15a,b♂ " CURTICOLLIS.
16♀ ANOPLISCHIOPSIS BASIMACULATUS.
17,17a,b♂ " BIVITTATUS.
18 ANOPLISCHIOPSIS FLAVOVITTATUS.
19 ANOPLISCHIUS PILIGER.
20♂ " MEXICANUS.
21♀ " DIVISUS.
22♂ " SANGUINICOLLIS.
23♂ " CHALCOPTERUS.
24♂ " LINEATUS, *var.*
25♀ " ELEGANS.

W. Purkiss lith. Hanhart imp.
649.




1♀ CREPIDIUS EMARGINATUS.
2♀ ANOPLISCHIOPSIS LINEATOCOLLIS.
3♂ ANOPLISCHIUS MACULICOLLIS.
4♂ » FLAVICOLLIS.
5♀ » LUCIDUS.
6♂ » FOVEIFRONS.
7,7a,b,♂ ISCHIODONTUS CARINICORNIS.
8♂ » POSTICUS.
9♂ » ANGUSTATUS.
10,10a,♂ ISCHIODONTUS CHIRIQUENSIS.
11,11a,♂ » ANCEPS.
12♀ » BALTEATUS.
13♀ » CYANOPTERUS.
14♀ » RESPLENDENS.
15,15a,♂ » METALLICUS.
16,16a,♂ » DENTICORNIS.
17,17a,♂ » PRASINOPTERUS.
18,18a,♂ » MARGINATUS.
19♂ ISCHIODONTUS VIRIDIS.
20,20a,♂ » GRISEIPILLIS.
21♂ » ERYTHRODERUS.
22♀ » » ,var.
23,23a,b,♂ » BREVIS.
24,24a,♂ » DEBILIS.
25♂ » MEL[illegible].
26,26a,b,♂ » LIMB[illegible].
27 » BIFASCIATUS.

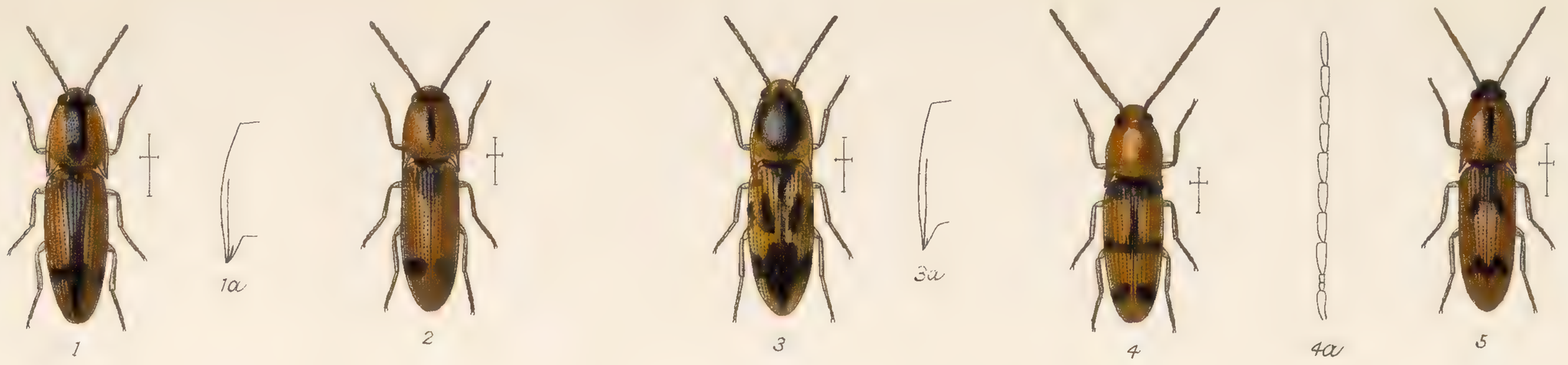
W. Purkiss lith.

Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8
Kodak Color Control Patches © The Tiffen Company, 2000 LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

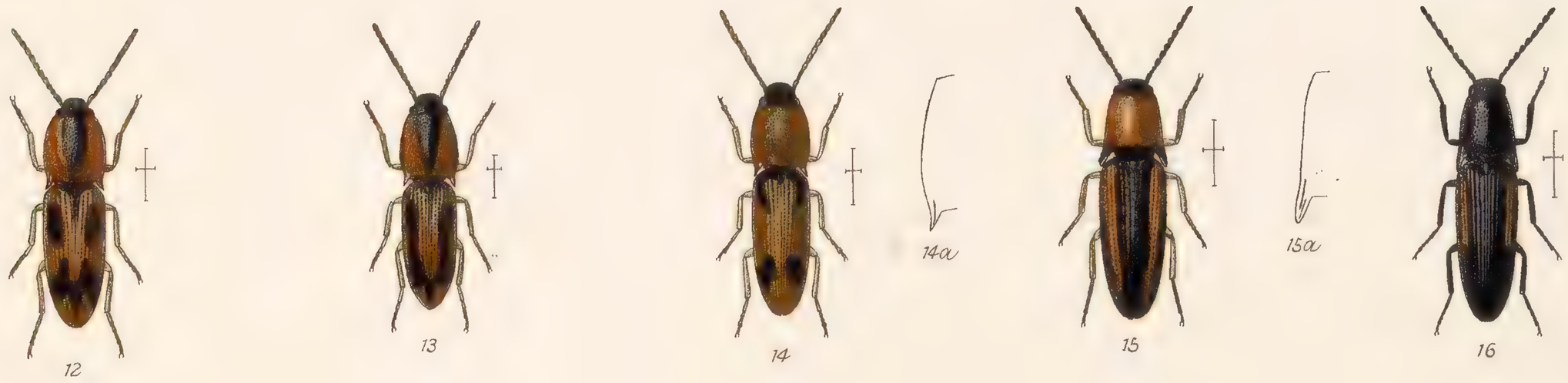



1 EUDACTYLUS GRANDINI.
2♂ ACHRESTUS FULVOVITTATUS.
3♂ EUDACTYLUS EBURATUS.
4♂ ACHRESTUS VENUSTUS.
5 EUDACTYLUS PARTITUS.
6,6a♂ MONOCREPIDIUS RODRIGUEZI.
7,7a♂ » FLAVANGULUS, *v.* VITTATUS.
8♂ » LIVIDUS.
9,9a♂ » RUBIDUS.
10,10a♂ MONOCREPIDIUS PARALLELUS.
11♂ » ANGUSTICOLLIS.
12♂ » NOCTURNUS.
13♂ » NOTATUS.
14 » EXCLAMATIONIS.
15 » INCONSTANS.
16♂ » BELTI.
17 » BIPUSTULATUS.
18 MONOCREPIDIUS VARIANS.
19,19a,20 » PICTUS, *vars.*
21 » BELLUS, *var.*
22 » MEXICANUS.
23,23a ÆOLUS BIMUCRONATUS.
24 MONOCREPIDIUS SEXPUSTULATUS.
25 » PARVULUS.
26 HETERODERES GIBBULUS.
27 ÆOLUS HEXASTIGMA.

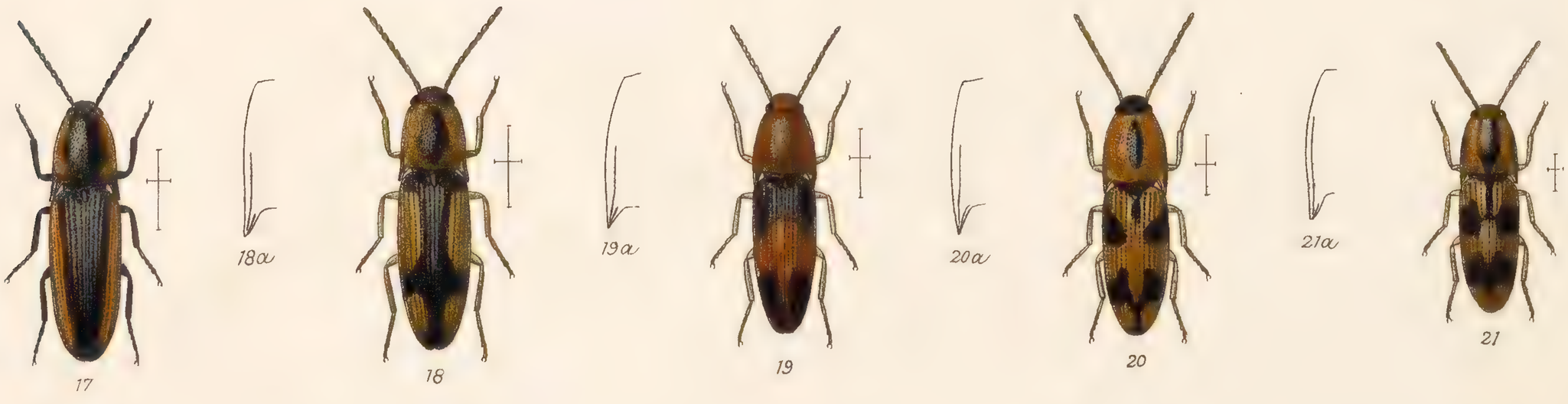
W. Purkiss lith. Hanhart imp.



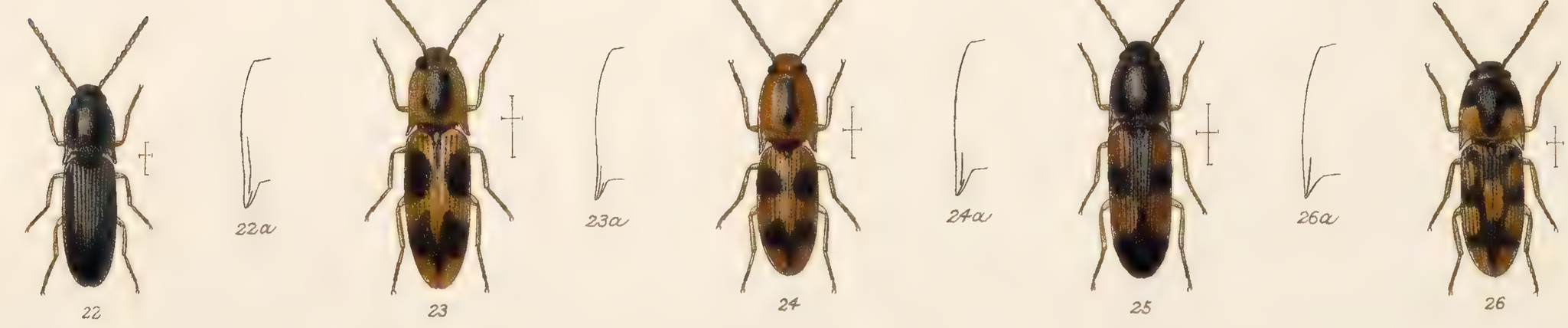

1 2 3 4 5 6 7 8 9 10 11




12 13 14 15 16




17 18 19 20 21




22 23 24 25 26

1,1a ÆOLUS FACETUS, *var.*
2 » TRIMACULATUS.
3,3a » TESTUDINEUS.
4,4a♂ » TRIPARTITUS.
5 » OBLIQUUS.
6,6a » PULCHELLUS.
7 » MARGINATUS.
8 » PANAMENSIS.
9♂ » MELLICULUS.
10 ÆOLUS TROPICALIS.
11,11a♂ » » , *var.*
12 » CIRCUMSCRIPTUS, *var.*
13 » TRILINEATUS.
14,14a » YUCATANUS.
15,15a♂ » PICTUS.
16♂ » VITTATUS.
17♀ » » , *var.*
18,18a ÆOLUS CRUCIGER.
19,19a » RUGIPENNIS.
20,20a » ATRICEPS.
21,21a » VERMICULATUS.
22,22a » NIGRITULUS.
23,23a » DISCOIDEUS.
24,24a » OVIPENNIS.
25 » RODRIGUEZI.
26,26a DRASTERIUS MERIDIONALIS.

KODAK Color Control Patches © The Tiffen Company, 2000 LICENSED PRODUCT Kodak
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters Inches



1♂ ELATER ARCTUS.
2, 2a♂ MEGAPENTHES BRASILIANUS.
3, 3a, b♀ " MELANOTOIDES.
4♀ " CINCTICOLLIS.
5♀ " BADIUS.
6, 6a-c♂ " FUSIFORMIS.
7♀ PHYSORHINUS DISTIGMA.
8♂ " " , *var.* CEPHALICUS.
9♂ " " , *var.*
10, 10a, b♂ PHYSORHINUS QUADRINOTATUS.
11 " CRUCIATUS.
12, 12a♂ " LONGICORNIS.
13, 13a♂ " STELLATUS.
14♂ ANCHASTUS SANGUINEUS.
15♂ " RUFICOLLIS.
16♂ " DISCOIDEUS.
17♀ " CIRCUMCINCTUS.
18♀ " AUGUSTI, *var.*
19♀ " DIVERSUS.
20, 20a♀ ANCHASTUS MELANURUS.
21 " SEMINIGER.
22♀ " MACULICOLLIS.
23 " BILINEATUS.
24♀ " FLAVOVITTATUS.
25♂ " " , *var.*
26♀ " " , *var.*
27, 27a " MORATUS.
28♂ " FLAVOMACULATUS.

W. Purkiss lith.    Hanhart imp.



1, 1a ANCHASTUS TENUISTRIATUS.
2 ANCHASTOMORPHUS PHEDRUS.
3 " APICALIS.
4 " SUTURALIS, *var.*
5 " " , *var.*
6, 6a " QUADRIGUTTATUS.
7♂ PSILONISCUS STICTICUS.
8♀ " COSTARICENSIS.
9♂ " APICALIS.
10♀ PSILONISCUS BRUNNEUS.
11♂ PARANIUS MEXICANUS.
12 DEROMECUS TRIVITTATUS.
13, 13a HYPNOIDUS CUCULLATUS.
14♂ SMILICERUS BELTI.
15 HYPNOIDUS TEAPENSIS.
16 POMACHILIUS SPINIFER.
17, 17a♂ HYPNOIDUS QUADRIPLAGIATUS.
18, 18a♂ " TETRASPILOTUS.
19 HYPNOIDUS QUADRISIGNATUS.
20 " MEXICANUS.
21, 21a, b AGRYPNELLA SQUAMIFERA.
22, 22a, b ARRHAPHES AMERICANUS.
23 APTOPUS LATERALIS.
24 " " , *var.*
25♂ " " , *var.*, BASALIS.
26♂ " " , *var.*
27 " " , *var.*

W. Purkiss lith. Hanhart imp

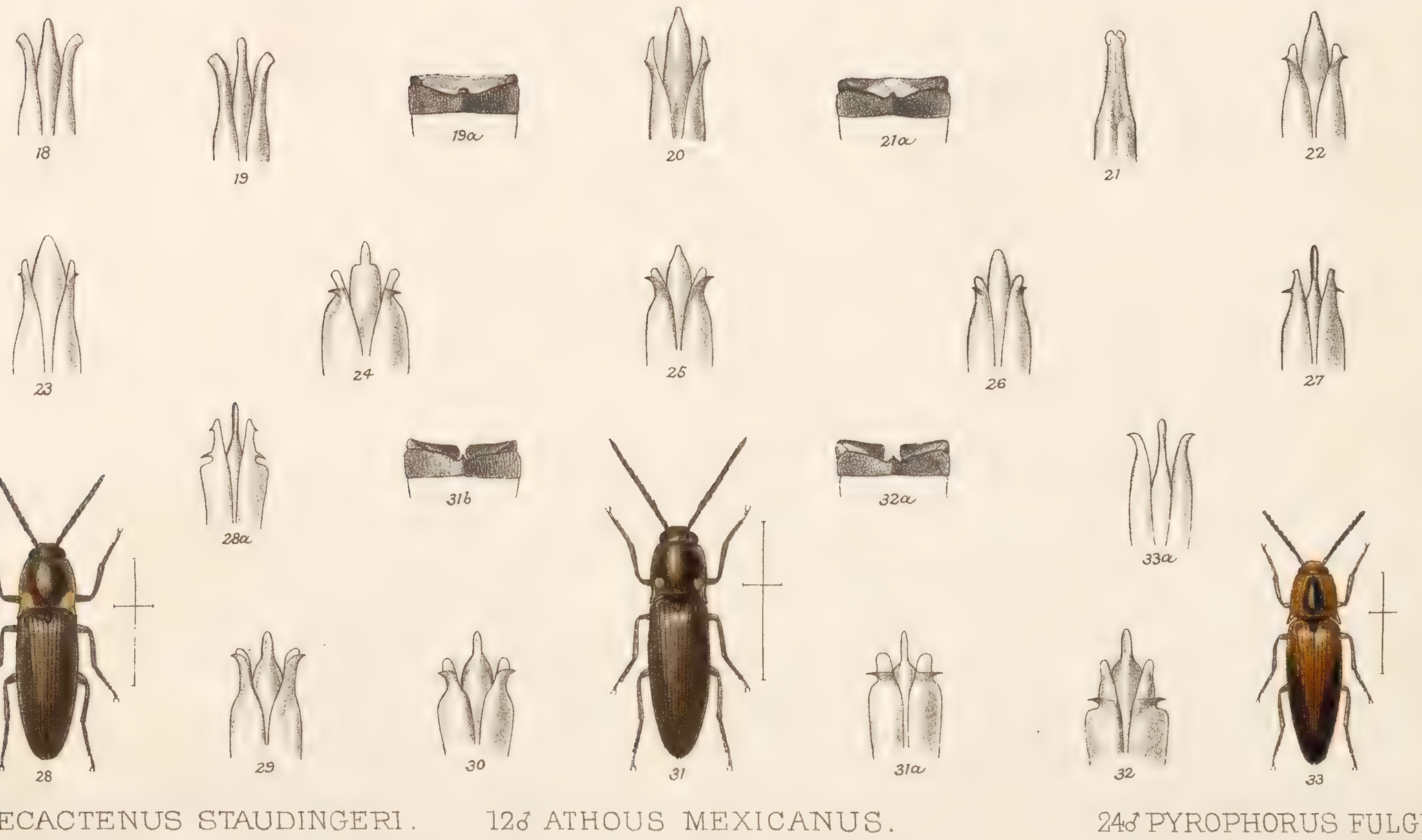



1,1a♂ APTOPUS PRUINOSUS.
2♂ CARDIOPHORUS APTOPOIDES.
3 » BREVIS, *var.*
4♂ » VULNERATUS.
5♂ APTOPUS COLLARIS.
6 » RUFOMARGINATUS.
7 TRIPLONYCHUS CARINATUS.
8♂ APTOPUS VICINUS.
9,9a♂ » ERICHSONI.
10♂ TRIPLONYCHUS TRIVITTATUS.
11♂ APTOPUS CAMPYLINUS.
12,12a-c♂ HORISTONOTUS DILATICORNIS.
13♂ TRIPLONYCHUS PARVULUS.
14,14a HORISTONOTUS TRUNCATUS.
15,15a » SULCIFER.
16,16a » BICINCTUS.
17♂ » FASCIATUS.
18 » DISCOIDEUS.
19♂ » APTERUS.
20,20a ESTHESOPUS HUMILIS.
21 » HEPATICUS.
22 » APICATUS.
23 » QUADRIPUSTULATUS
24 » ATRIPENNIS.
25 » BREVIUSCULUS.
26 » BIFASCIATUS.
27♀ » COARCTATUS.
28♂ » SCAPULARIS.

W. Purkiss lith. Hanhart imp.
662.

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

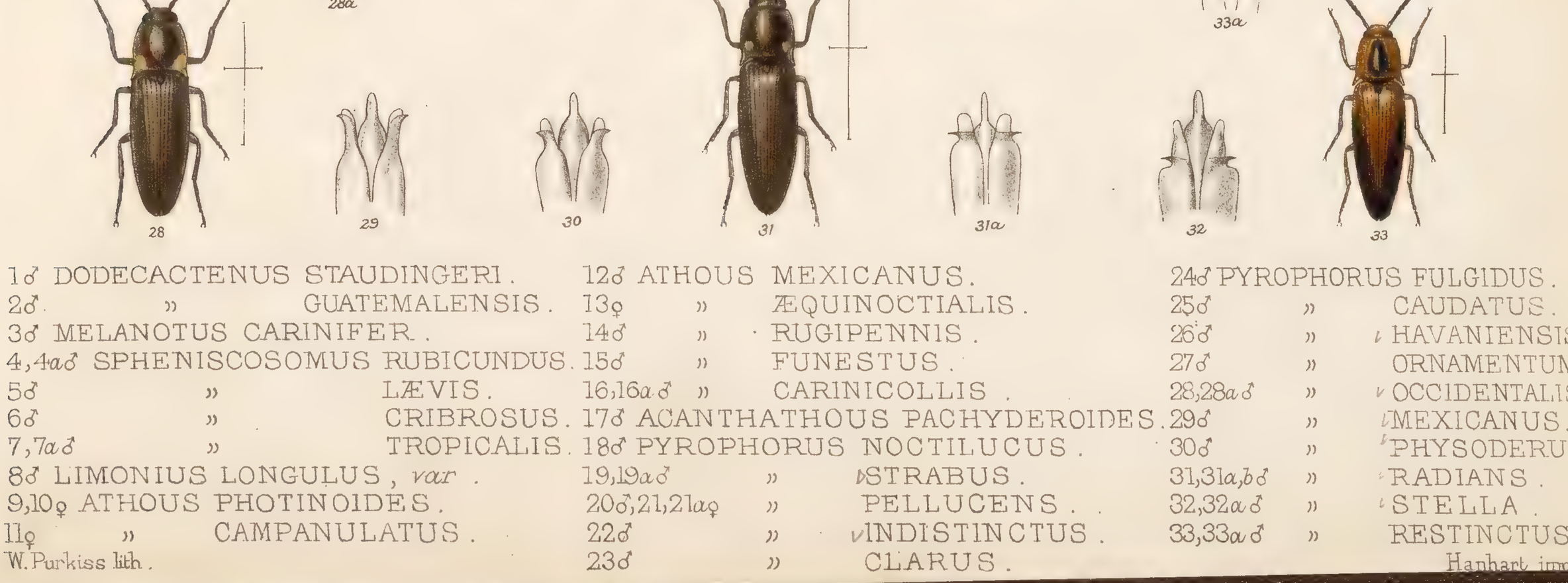



1♂ DODECACTENUS STAUDINGERI.
2♂ » GUATEMALENSIS.
3♂ MELANOTUS CARINIFER.
4,4a♂ SPHENISCOSOMUS RUBICUNDUS.
5♂ » LÆVIS.
6♂ » CRIBROSUS.
7,7a♂ » TROPICALIS.
8♂ LIMONIUS LONGULUS, *var*.
9,10♀ ATHOUS PHOTINOIDES.
11♀ » CAMPANULATUS.
12♂ ATHOUS MEXICANUS.
13♀ » ÆQUINOCTIALIS.
14♂ » RUGIPENNIS.
15♂ » FUNESTUS.
16,16a♂ » CARINICOLLIS.
17♂ ACANTHATHOUS PACHYDEROIDES.
18♂ PYROPHORUS NOCTILUCUS.
19,19a♂ » STRABUS.
20♂,21,21a♀ » PELLUCENS.
22♂ » INDISTINCTUS.
23♂ » CLARUS.
24♂ PYROPHORUS FULGIDUS.
25♂ » CAUDATUS.
26♂ » HAVANIENSIS.
27♂ » ORNAMENTUM.
28,28a♂ » OCCIDENTALIS.
29♂ » MEXICANUS.
30♂ » PHYSODERUS.
31,31a,b♂ » RADIANS.
32,32a♂ » STELLA.
33,33a♂ » RESTINCTUS.

W. Purkiss lith.

Hanhart imp.

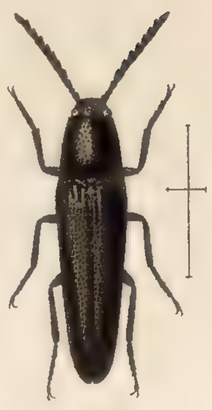


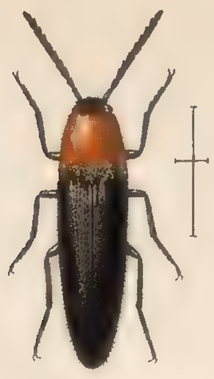


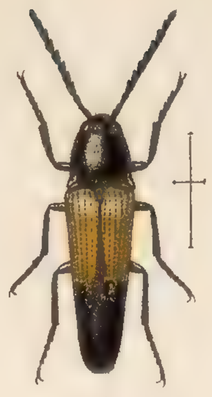
1, 1a♂ ALAMPES MELANOXANTHUS.
2 CORYMBITES PILATEI.
3♀, 3a♂ ALAMPES VESTITUS.
4♂ ANTHRACOPTERYX MEXICANUS.
5 ISCHIUS HAAGI.
6♀ HEMICREPIDIUS BIVITTATUS.
7♂ " INSTABILIS.
8♀ " ", v. LEUCOSTIGMA.
9♂ " LONGICOLLIS.
10♀ HEMICREPIDIUS CONSOBRINUS.
11♀ " PATRUELIS.
12♀ " PARVULUS.
13♀ " FLAVIPES.
14♂ " CANDEZEI.
15♂ " LONGICORNIS, *var.*
16♂ " CRUCIATUS.
17♀ " PICTIPES.
18, 18a♂ ALLOTRIOPSIS NASALIS.
19♂, 20♀ HEMICREPIDIUS BIFORMIS.
21♂ HYPODESIS SERICEA.
22♀ " AUREIPILIS.
23♀ " PENICILLATA.
24♀ " AURICOMA.
25♂ " VITTATA.
26♂ " VIRIDIPENNIS.
27♀ CARDIORHINUS BINOTATUS.

W. Purkiss lith.


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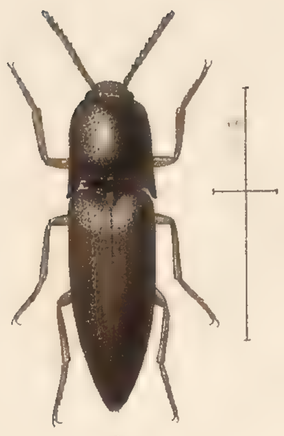

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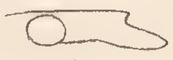

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5


10


6

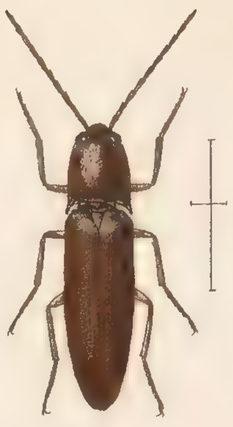

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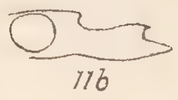

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7a

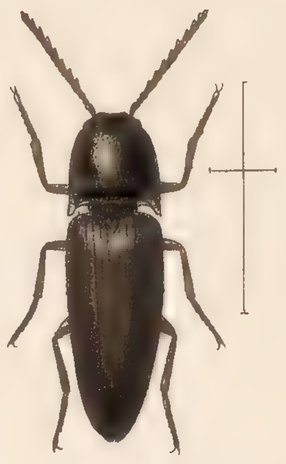

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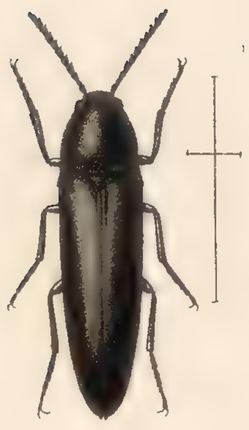

9a


9


11b


11a

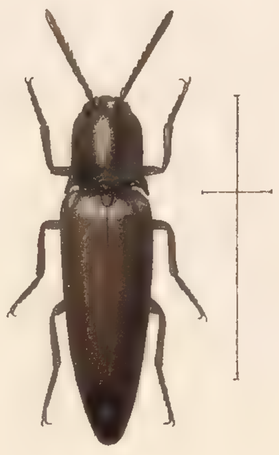

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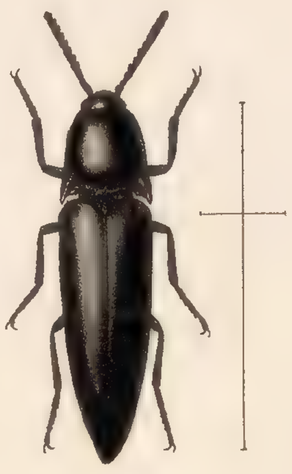

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12a


13


13a


14


15

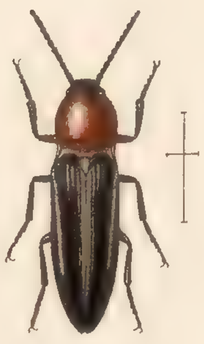

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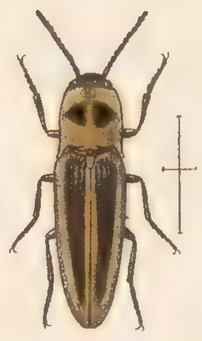

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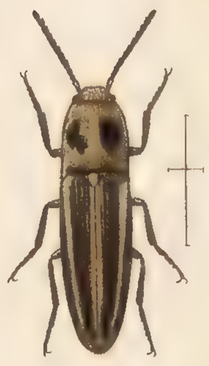

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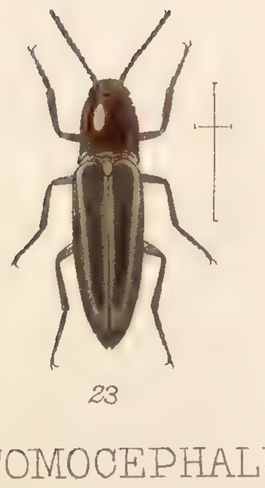

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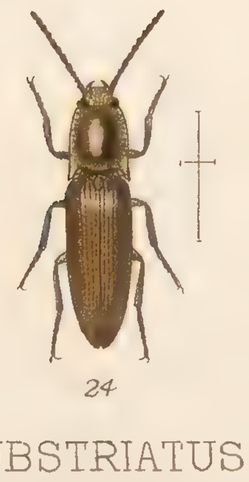

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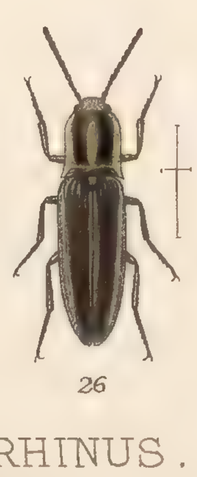

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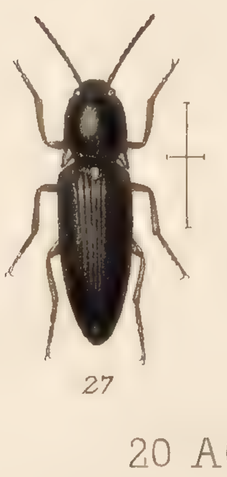

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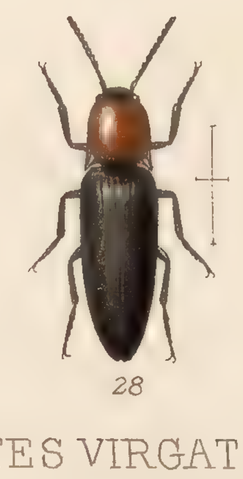

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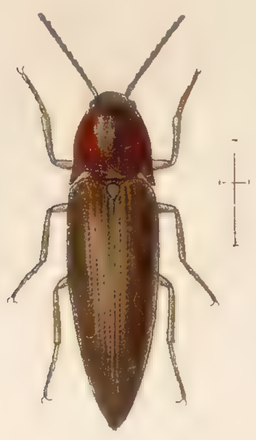

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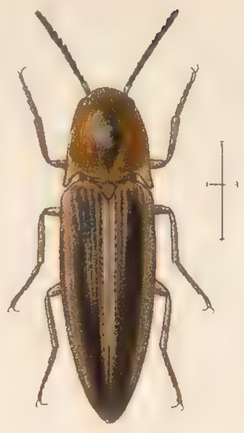
1♂ TOMOCEPHALUS SUBSTRIATUS.
2♀ » MELANOTUS.
3♀ » SARDIODERUS.
4♂ » BICOLOR.
5♀ » INSIGNIS.
6,6a♀ LUDIUS CYLINDRICOLLIS.
7,7a♂ » NIGRICOLLIS.
8♂ » BREVIUSCULUS.
9,9a♂ » DEPRESSUS.
10 LUDIUS PHYSORHINUS.
11,11a♂ » SETOSUS.
12,12a♂ ORTHOSTETHUS CORVINUS.
13,13a♀ » PICEUS.
14♂ » CAVIFRONS.
15♀ » GLABRATUS.
16,16a♂ » PECTINICORNIS.
17 AGRIOTES SUBLINEATUS.
18,18a♂ » LINEIPENNIS.
19 » HILARIS.
20 AGRIOTES VIRGATUS, *var.*
21 » PULCHERRIMUS.
22 » », *var.* LIGATUS.
23 » » *var.*
24 » CASTANEIPENNIS.
25 » PEXUS.
26 » TÆNIATUS.
27 » BICOLOR.
28 » MINIATOCOLLIS.

W. Purkiss lith. Hanhart imp.

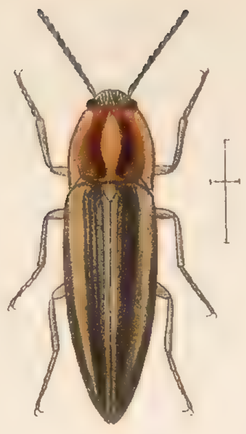
Inches 1 2 3 4 5 6 7 8
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black



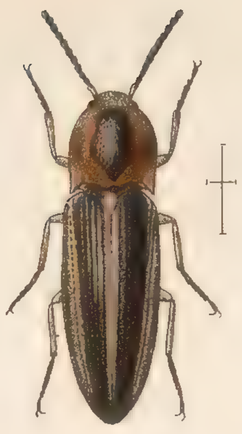
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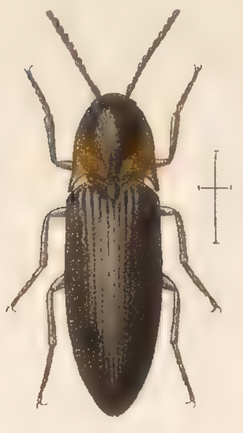
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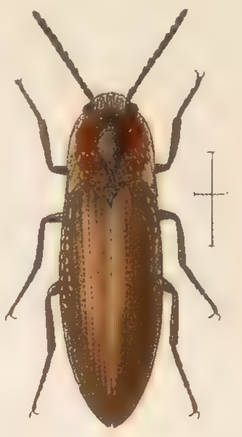
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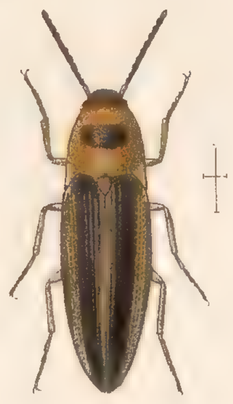
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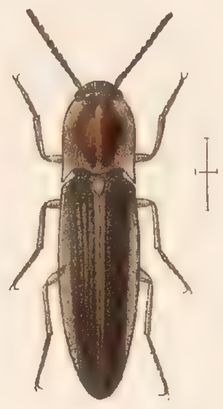
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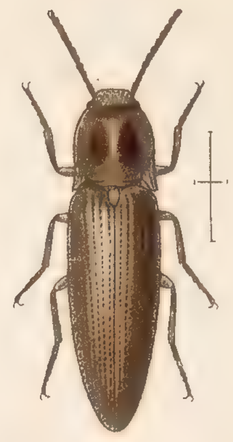
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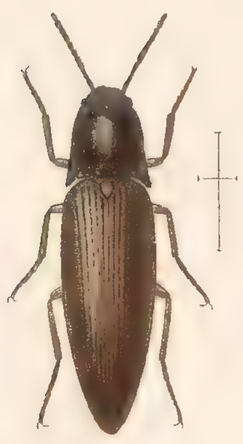
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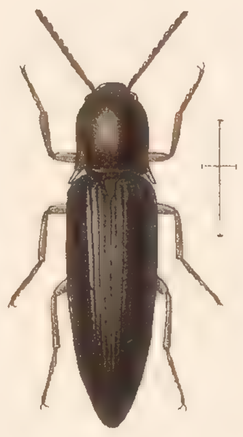
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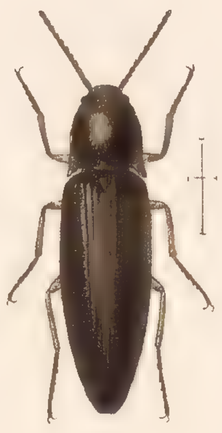
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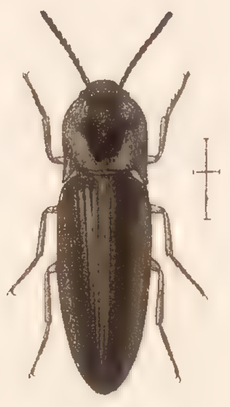
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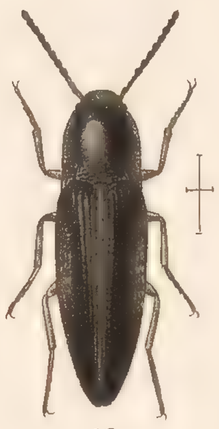
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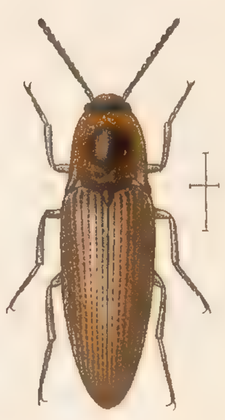
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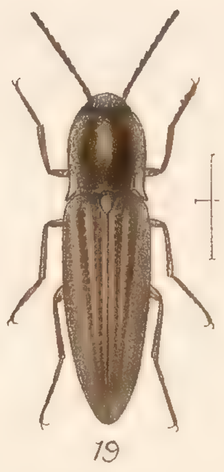
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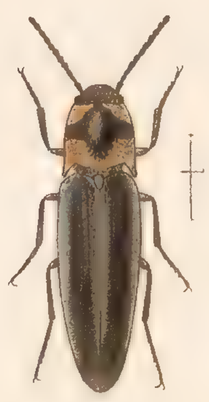
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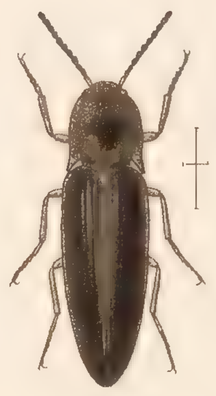
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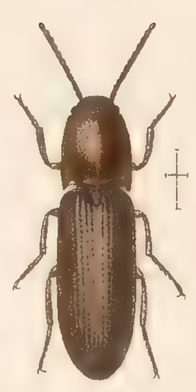
21a



21



22a



22



23



24



25



26



27



28a



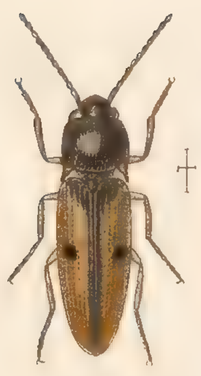
30a



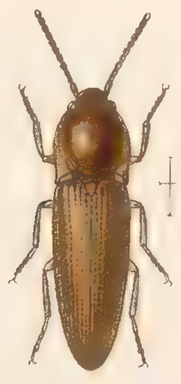
30b



33a



28



29



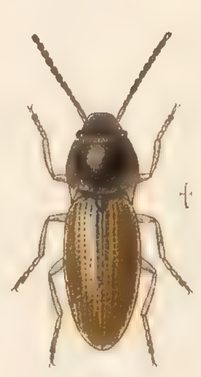
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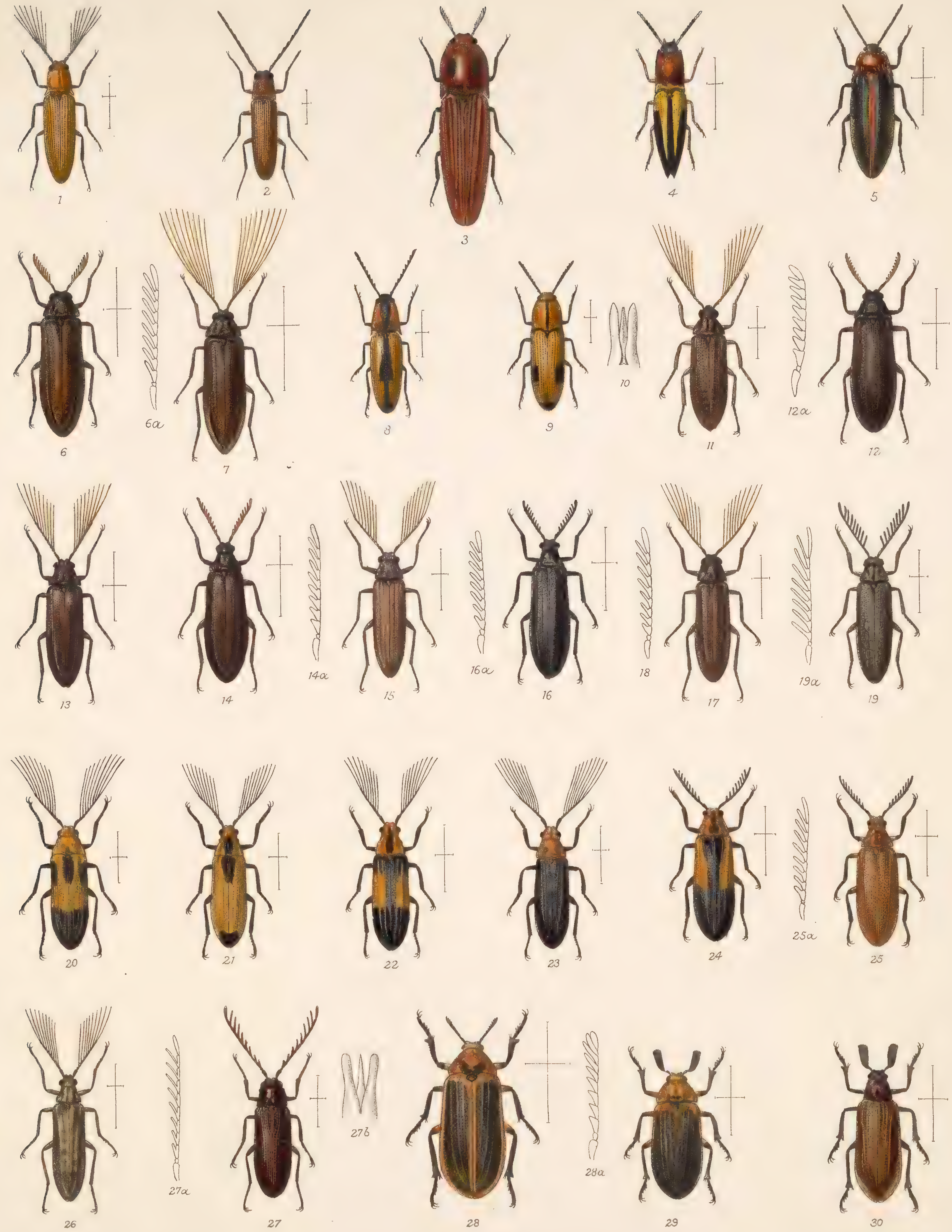
32



33

1 AGRIOTES ACUTUS.
2 » LATERALIS.
3 » TRIVITTATUS.
4 » NOTATUS..
5,6 » AMABILIS.
7 » SCAPULARIS.
8 » QUADRIVITTATUS.
9 » » ,*var.*
10 » TRILINEATUS.
11 » BINOTATUS.
12 AGRIOTES VACCINUS.
13 » LONGIPENNIS.
14 » CURTICOLLIS.
15 » QUADRATICOLLIS.
16♂,17♀ » INSOLITUS.
18♀ » ALTERNUS,*var.*
19♀ » QUADRILINEATUS.
20 » CRUCIATUS.
21, 21*a* » OPACICOLLIS.
22, 22*a* » ANGUSTATUS.
23 GLYPHONYX CUNEATUS.
24 GLYPHONYX PROPINQUUS.
25 » NIGRITUS.
26 » EBENINUS.
27 » PARALLELUS.
28,28*a* » ANGULATUS.
29 » LATICOLLIS.
30,30*a*,*b* » MIMETICUS.
31 » QUADRINOTATUS.
32 » CINCTUS.
33,33*a* MICROGLYPHONYX COARCTATUS.

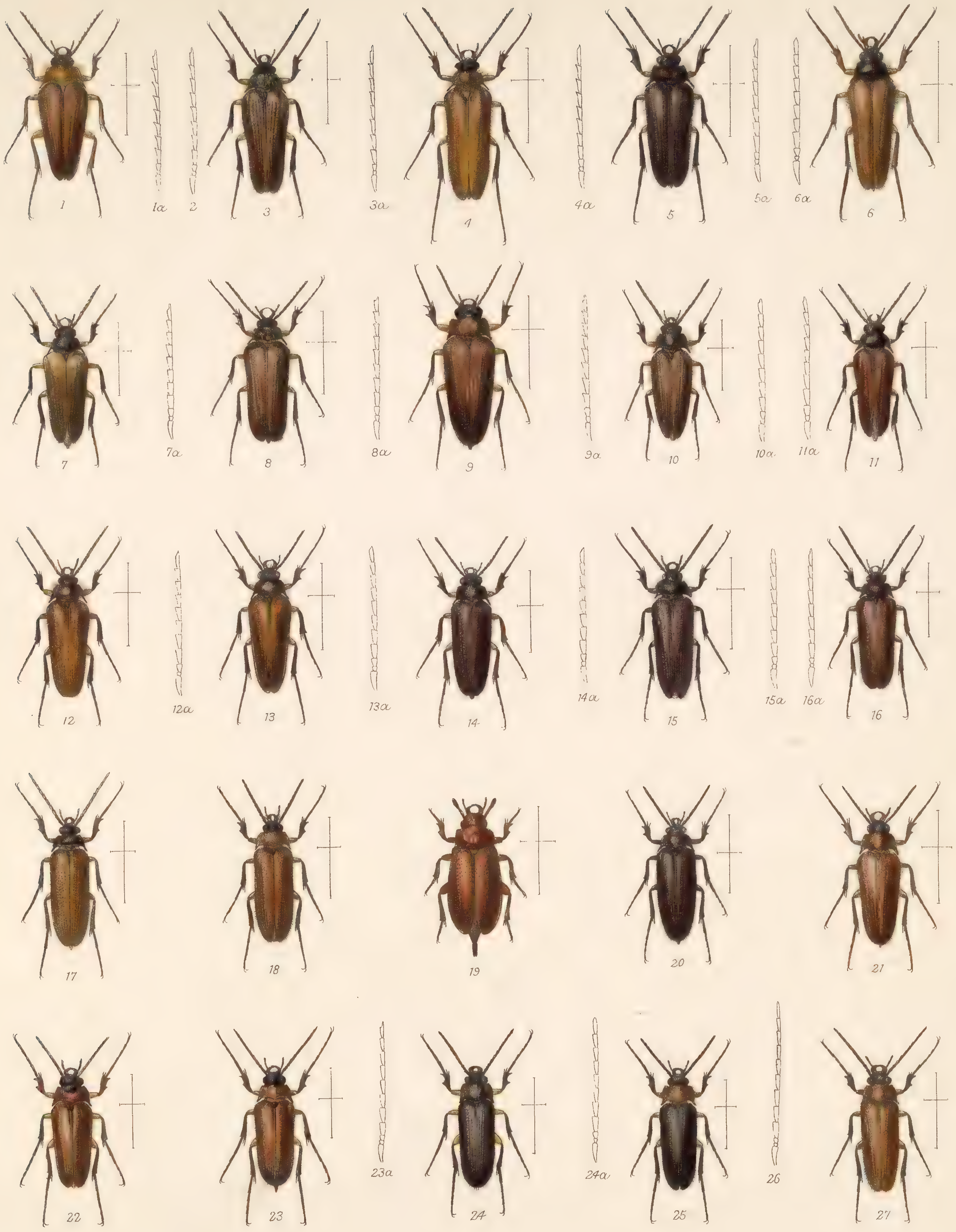
W. Purkiss lith.



1♂ OCTINODES CARINATUS.
2♂ CYLINDRODERUS CRIBRICOLLIS.
3♀ HEMIRHIPUS FERRUGINEUS.
4♂ SEMIOTUS CARUS, *v.* ANTENNALIS.
5 OISTUS SUTURALIS.
6, 6*a*♀, 7♂ CALLIRRHIPIS CARINIFER.
8♂ ANOPLISCHIOPSIS LINEATOCOLLIS.
9♀ ANOPLISCHIOPSIS TRINOTATUS.
10♂ CALLIRRHIPIS OBSOLETA.
11♂, 12, 12*a*♀ " UNICOSTATA.
13♂, 14, 14*a*♀ " DILATICOLLIS.
15♂, 16, 16*a*♀ " VESTITA.
17♂, 18♀ " MEXICANA.
19, 19*a*♂ CALLIRRHIPIS VENOSA.
20–23♂ " LAPORTEI.
24, 25, 25*a*♀ " "
26♂ " TENUIPES.
27, 27*a*, *b*♂ PTORTHOCERA CALVA.
28, 28*a*♀, 29♂ SANDALUS NIETOI.
30♂ " CONICICOLLIS.

W. Purkiss lith. Hanhart imp.

Blue Cyan Green Yellow Red Magenta White 3/Color Black
KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Centimetres Inches

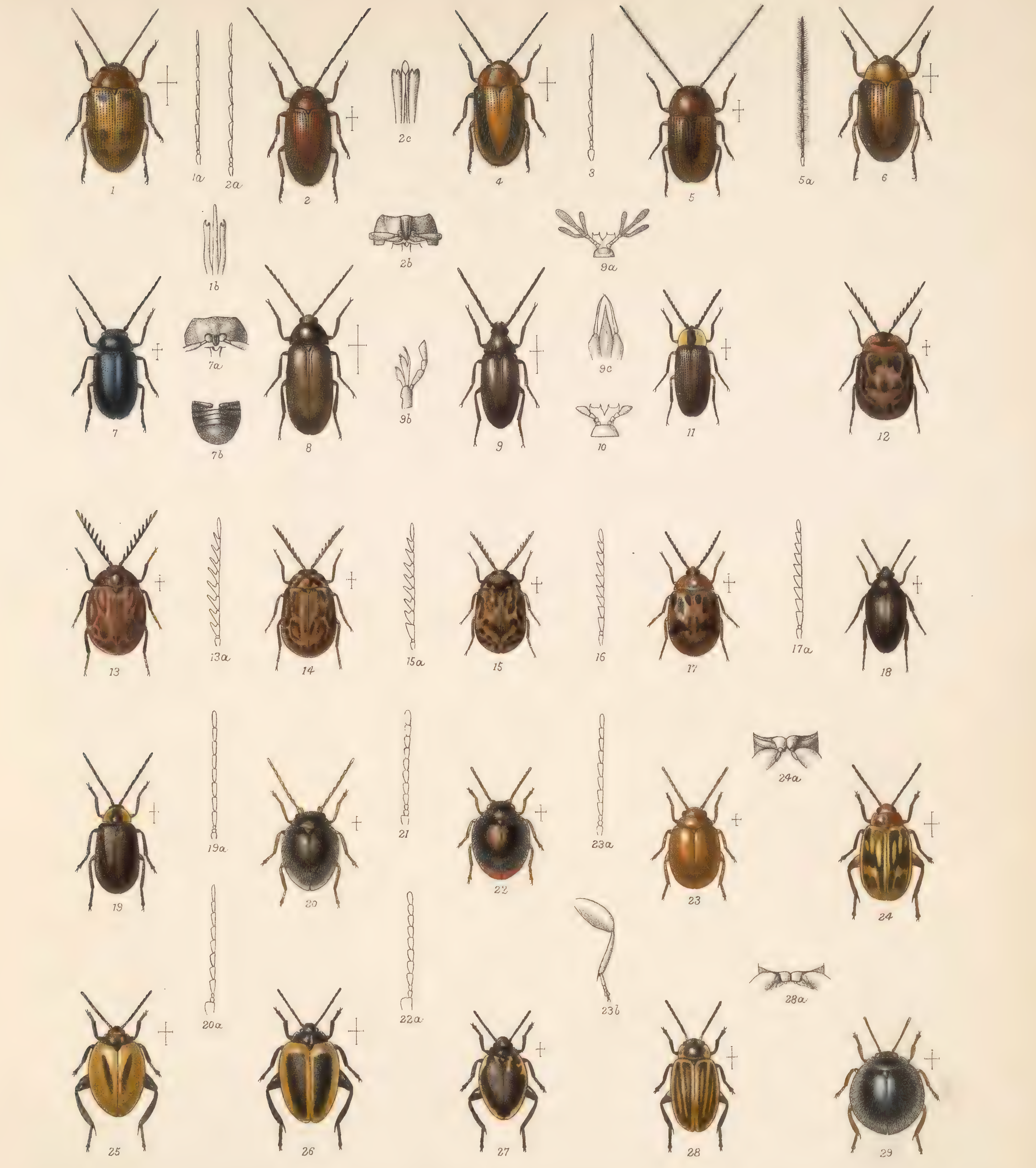



1, 1a ♂ SCAPTOLENUS FULVUS.
2 ♂ " VAGANS.
3, 3a ♂ " ACUTANGULUS.
4, 4a ♂ " AMPLIPENNIS.
5, 5a ♂ " GUTTIVENTRIS.
6, 6a ♂ " HIRTICOLLIS.
7, 7a ♂ " CALIFORNICUS.
8, 8a ♂ " ACROGNATHUS.
9, 9a ♂ " LATICOLLIS.

10, 10a ♂ SCAPTOLENUS VILLOSUS.
11, 11a ♂ " MOUFFLETI.
12, 12a ♂ " PUEBLÆ.
13, 13a ♂ " CANDEZEI.
14, 14a ♂ " NIGRICEPS.
15, 15a ♂ " BREVICOLLIS.
16, 16a ♂ " GEHINI.
17 ♂ " RUFICORNIS.

18 ♂ SCAPTOLENUS CHEVROLATI.
19 ♀, 20 ♂ " RUBRIVENTRIS.
21 ♂ " GUERINI.
22 ♂ " SIGNATICOLLIS.
23, 23a ♂ " TEAPENSIS.
24, 24a ♂ " FEMORALIS, *var.*
25 ♂ " " , *var.*
26 ♂ " LONGICORNIS
27 ♂ " OBSCURICEPS.

W. Purkiss lith.

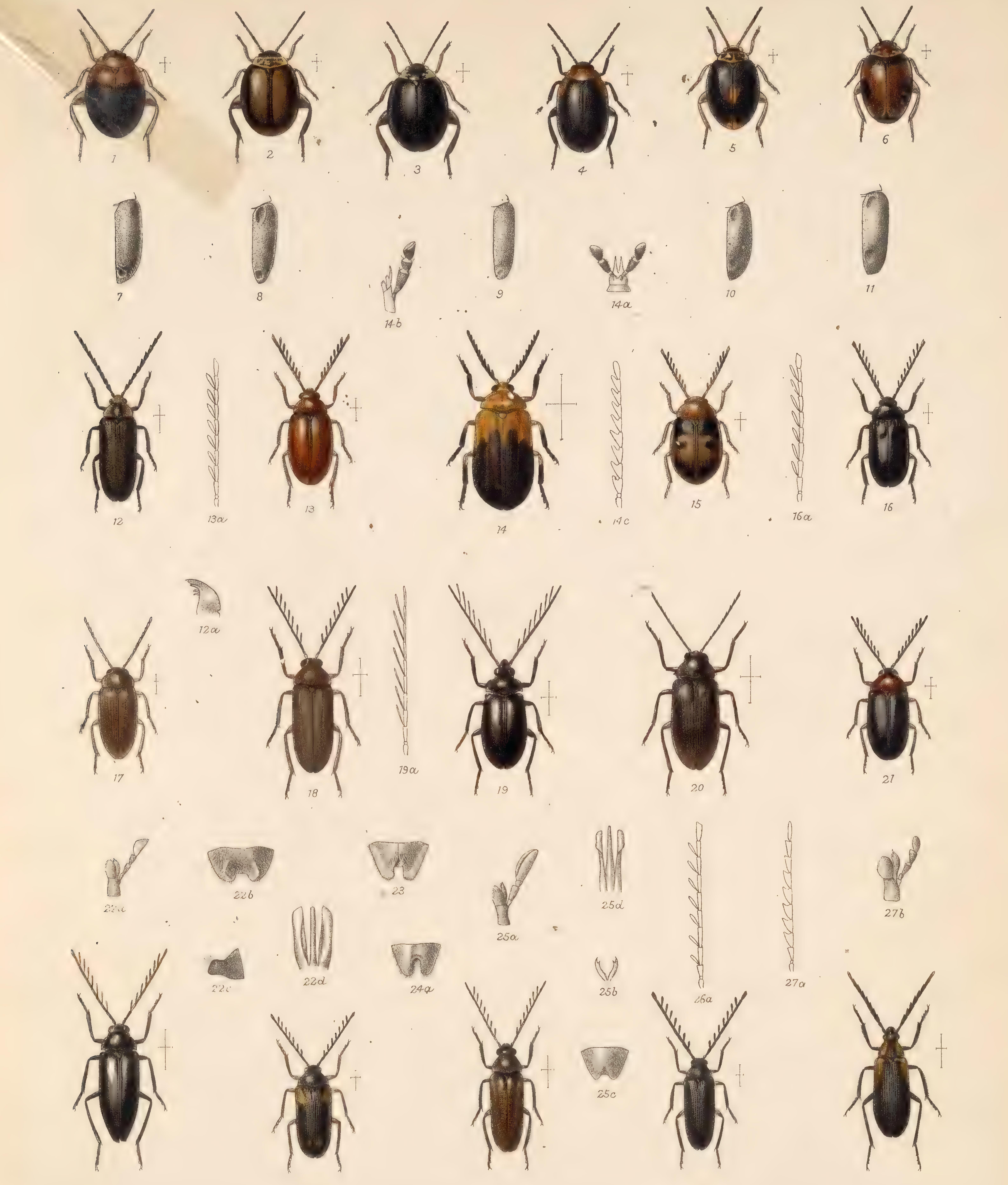



1, 1a, b, ♂ ARTEMATOPUS IRRORATUS.
2, 2a-c, ♂ ” RUFESCENS.
3 ♀ ” ”
4 ♂ ” OBLIQUUS.
5, 5a, ♂ ” SETICORNIS.
6 ” SCAPULARIS.
7, 7a, b CTESIBIUS EUMOLPOIDES.
8 ♀ ANCHYTARSUS SUBSTRIATUS.
9, 9a-c, ♂ TETRAGLOSSA PALPALIS.

10 ♀ TETRAGLOSSA PALPALIS.
11 CNEOGLOSSA LAMPYROIDES.
12 ♂ DICRANOPSELAPHUS PICTUS.
13, 13a ♂ ” VENOSUS.
14 ♂ ” FLAVICORNIS.
15, 15a ♂, 16 ♀ ECTOPRIA RETICULATA.
17, 17a ♀ ” VERMICULATA.
18 EUCINETUS STRIGIPENNIS.
19, 19a ♀ HELODES MEXICANA.
20, 20a ♂ PRIONOCYPHON PILICORNIS.

21 ♀ PRIONOCYPHON PILICORNIS.
22, 22a ♂ ” AURITUS.
23, 23a, b PRIONOSCIRTES SALTITANS.
24, 24a ORA TROBERTI.
25 ” OBLIQUA.
26 ” DISCOIDEA.
27 ” MIXTA.
28, 28a SCIRTES OBLONGUS.
29 ” CÆRULEUS.

W. Purkiss lith. Hanhart imp.




1 SCIRTES ROTUNDATUS.
2 " CIRCUMCINCTUS.
3 " THORACICUS.
4 " SCAPULARIS.
5 " SUBORBICULATUS, *var.*
6 " QUADRINOTATUS.
7♀ CYPHON BIFOVEOLATUS.
8♀ " 4-FOVEOLATUS.
9♀ " PARALLELUS.

10♀ CYPHON IMPRESSIPENNIS.
11♀ " TRUNCATUS.
12, 12a ♂ HAPLOGLOSSA COLLARIS.
13, 13a ♂ PTILODACTYLA RUFA.
14, 14a-c TELON CUCULLATUS.
15♂ PTILODACTYLA MACULATA, *var.*
16, 16a ♂ " SUBSTRIATA.
17♀ " BREVICOLLIS.
18♂ " RUGULOSA.

19, 19a ♂ PTILODACTYLA DILATICOLLIS.
20♀ " DENTICOLLIS.
21♂ " CORVINA, *var.*
22, 22a-d ♂ " CAUDATA.
23♂ " DENTICULATA.
24, 24a ♂ " MONTANA.
25, 25a-d ♂ LACHNODACTYLA MONTICOLA.
26, 26a ♂ PTILODACTYLA TENUIS.
27, 27a, b ♀ CHÆTODACTYLA LYCIFORMIS.

W. Purkiss lith. Hanhart imp.

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